WILDERNESS REHABILITATION FOR OFFENDERS: AN EVALUATION OF CHRISTCHURCH COMMUNITY CORRECTIONS OUTDOOR EXPERIENCE PROGRAMME.

by

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ABSTRACT

This project is an evaluation of an outdoor experiential programme run by the Christchurch Justice Department's Community Corrections Service. Three methods are used to evaluate this intervention. The first is a theoretical assessment of how this and other programmes of its type fit with a number of effective intervention principles outlined by McLaren (1992) and Gendreau and Andrews (1992). Viewed in terms of rehabilitation components understood to be effective in crime reduction, the programme showed a number of qualities consistent with effective principles. It also revealed aspects not associated with crime reduction. These findings suggested that the programme is a moderately effective method of rehabilitation.

Secondly, a retrospective experimental study was conducted following a similar method to that of Campbell et. als' (1982) previous evaluation of the same programme. In this study forty offenders who completed an outdoor experiential course during 1989 and 1990 were matched on related variables with forty non-participants on probation during the same period, the groups were then compared on a number of measures of reoffending. Results from this study were mixed. A gross measure of reoffending showed similar percentages in both groups returned to crime. Whilst frequency of reoffending revealed a trend in the expected direction, this difference was also non significant. It was found however that on average outdoor participants offended fewer times in relation to their previous crime rate and the control group did not significantly change. Contrary to this positive result, no significant differences were found when individual levels of improvement before and after the intervention were compared.

In a second experimental study twelve clients from four separate expeditions completed self-report questionnaires before and after the expedition along with a general program evaluation. As anticipated there were significant increases in feelings of well-being and global levels of self-efficacy. A general course evaluation questionnaire revealed feelings of achievement and the experience of being amongst nature were considered the most important factors of personal gain.

These findings suggest that the Christchurch Justice Department programme is successful in promoting intermediate changes but is marginally effective in reducing crime. Whilst it may be valuable in the context of other correctional aims and methods, this one week intervention on its own, is not sufficient to alter criminal behaviour.

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1. INTRODUCTION

For the last decade the Christchurch Community Corrections department[1] has offered an outdoor pursuits programme[2] for offenders on supervision sentences. The expeditions are run by Probation staff who have been trained in outdoor skills. They are generally five to seven days long and take groups of up to ten people into alpine and bush areas around the Canterbury region. The implicit assumption underlying the programme is that it will benefit individuals in such a way as to deter further offending.

Based on an Outward Bound type experience and targeted at the young offender, outdoor experiential programmes became popular in North America in the 1970's. Early evaluation research demonstrated that they led to some success in reducing participants' crime levels within the first year of completion (Kelly and Baer 1971). Similar programmes were soon established throughout New Zealand. No doubt due to their cost-efficiency and the relative ease with which a wilderness experience can be provided in this country, these types of rehabilitation programmes are now widely used within correctional processing.

Although there are a number of New Zealand and overseas studies which claim that these programmes are useful rehabilitation tools, many of them have lacked experimental rigour, and their criteria of success have been defined differently. Programmes also vary in length, intensity and format, making it very difficult to generalise outcomes from one

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[1] Formally known as the Christchurch Probation department, the community Corrections Department supervises offenders serving community based sentences.

[2] Outdoor pursiuts and wilderness programmes are terms which refer to the same type of programme concept. The word 'wilderness' is popuarly used in North America to describe natural outdoor environments. Whilst this programme is referred to as outdoor pursuits since the word is more appropriate to New Zealand terminology it is also, by this definition, a wilderness programme. The terms outdoor pursuits, outdoor experiential and wilderness will be used interchangeably to describe this and other similar programmes in the ensuing discussion.

programme to the next. Because effective programme components have not yet been clearly identified and the structure of programmes differ, the question of whether or not a programme has positive benefits needs to be asked of each one.

Previous evaluation studies have generally focused on measures of psychological change such as self-esteem or reoffending. These criteria of effectiveness are consistent with what Gendreau and Ross (1986) describe as the primary and secondary rehabilitation goals. The primary goal is the benefit for society whereby the offenders behaviour is modified to conform with the law. The secondary goal benefits the individual (such as improving personal adjustment, self-esteem or skill acquisition) as a means of achieving the primary goal. Using these rehabilitation objectives as a guideline, this evaluation aims to measure the extent to which the intervention encourages reduced illegal behaviour or may manifest other positive changes in participants.

A theory on correctional treatment has recently emerged proposing there to be certain constituents within programmes which determine their efficacy (McLaren 1992) and a number of principles have been isolated which appear to be common to successful programmes. So far the existing literature on outdoor pursuits has made no reference to how this method of intervention concords with these principles. The components which contribute to sucessful programmes can provide a framework for reviewing the programme and help align this treatment modality with knowledge of offender reform.

To meet the evaluation needs of developing an assessment procedure pertinent of rehabilitation goals which may be of assistance to the Community Corrections Department, a multi modal evaluation method was chosen. Three separate studies look firstly at how rehabilitation

through outdoor pursuits relate to effective reform principles secondly how the programme effects subsequent reoffending and thirdly its psychological benefits.

The study begins with the debate on corrective reform providing our introduction to the broader concept of rehabilitation. Next, evaluation studies on outdoor pursuits rehabilitation programmes based on the outward bound construct are reviewed. This provides a background for our evaluation and illustrates the limitations of findings in this field of research. As a part of our review, the components of the programmes which may be causally related to positive benefits are considered. This section discusses elements special to this method of rehabilitation and offers a model of change. The model proposes that psychological benefits are achieved through the success experience via secondary control and feelings of harmony with nature.

The introductory literature review brings us to the current programme being evaluated and the method by which this is done. The first evaluation was a descriptive measure of the current intervention in terms characteristics associated with successful rehabilitation programmes. This method of programme assessment was an exploratory investigation that aimed provide a link between the wilderness programme being evaluated and criminal rehabilitation. It also offers possibilities of how the programme might work to alter criminal behaviour.

To determine whether the programme is effective in reducing crime levels, the criminal records of former programme participants were compared to a matched control group with similar criminal histories. The characteristics on which the two groups were matched were drawn from criminal prediction studies. Research on the prediction of crime is reviewed in this section and factors associated with future criminality

outlined. Recidivism was defined by the number of court appearances and offences committed over a subsequent twelve month period.

A second experimental procedure involved those who were currently participating in the programme and utilised a prospective design to measure change in self-efficacy and well-being over the course of such programmes. The measures were chosen by their relationship to the factors proposed to influence psychological change whereby the natural environment will engender well-being and the experience of success improves self-efficacy. A general course evaluation questionairre designed to give a broad overall assessment of the programme was also used. Items were based on benefits which had been outlined in wilderness and recreation literature as well as the programmes stated objectives.

2. LITERATURE REVIEW

2.1. Rehabilitation programmes - what works?

When considering the efficacy of any treatment programme for offenders it is important to ask what interventions are known to be effective and what are their qualities. The question of what works best to reduce reoffending has been a focus of considerable academic debate in recent years. Whilst accumulated evidence has shown that traditional deterrence techniques are unsuccessful in this respect, alternative methods of reform have had varying degrees of support.

One of the most popularly cited pieces of research addressing the issue of what treatments successfully reduce reoffending is an article by Martinson entitled "What works: questions and answers about prison reform" (1974). Contrary to correctional policy of the time, Martinson proposed that on the whole rehabilitation alternatives are ineffective and had no appreciable effect on recidivism. Martinson's claims captured professional and public attention and his findings, along with a changing political climate, significantly shifted the direction of criminal justice goals (Gendreau and Ross 1986). These results triggered a great deal of controversy and sparked an ongoing dispute among criminologists.

Perhaps of greatest concern to rehabilitation advocates was the readiness of the public and professionals to dismiss alternative correctional interventions so quickly. Martinson's first report has been criticised for its over-simplified conclusion that failed to acknowledge those programmes that were successful. Although no single broadly categorised treatment guaranteed reduced recidivism several programmes had shown promising results for certain groups of offenders (Palmer 1986; Cullen and Gendreau

1989). In fact Martinson recanted his position five years later to state that some treatment programmes are indeed beneficial. In comparison however, this essay received little publicity. Cullen and Gendreau (1989) suggested that the influence of Martinson's original report had as much to do with the political and social climate of the time as it did with his conclusions:

> *"the studies were paid attention to selectively and for most people were used to justify, not form opinions about correctional treatment" (p.26) furthermore "the social context that made liberals anxious about state power and conservatives anxious about social disorder served to undermine confidence and fuel the attack on the rehabilitative ideal" (p.30).*

Reviews of correctional programme evaluation studies published after Martinson however, often reached more optimistic conclusions concerning the effectiveness of rehabilitation programmes. (see Gendreau 1981, Gendreau and Ross 1987, VanVorhis 1987, Andrews et al 1990 a, Andrews et al 1990 b, McLaren 1992). These researchers have attempted to define the underlying characteristics of effective interventions, rather than use the more general approach of an effectiveness count for each of a number of broad intervention types. The technique of meta-analysis has been applied to rehabilitation evaluations in later reviews. Groups of studies involving a diverse array of interventions and using different designs may be compared using this technique, thus helping in the clarification of effectiveness conclusions from large scale reviews. Findings suggested that success in reducing recidivism was more reliant on the degree of conformity with general principles of effectiveness rather than on the particular type of intervention.

The 'what works' dispute is by no means resolved, although it now focuses on a different set of issues. It has been impossible to ignore the fact

that many well designed empirical studies have shown reductions in reoffending for various types of rehabilitative treatment. Instead of an all-or-nothing dichotomy, the debate has shifted to a discussion of the extent to which rehabilitation is effective and whether meaningful conclusions on the conditions which are successful can be made. The rehabilitation concept seems to have survived criticism from scholars and politicians of the 70's and 80's, so that the current mood exhibits a more favourable attitude toward correctional rehabilitation (see Cullen et al 1990, McLaren 1992).

2.2. Outdoor pursuits programmes

The origins of therapeutic wilderness programmes stem from the Outward Bound concept, established by Kurt Hahn in 1941. The school started off as a training scheme for merchant seamen with the objective of improving their war-time chances of survival. Hahn believed that along with rigorous physical training it was important to teach self discipline, initiative and compassion (Brown and Simpson 1976). The Outward Bound concept gained popularity during the 1960s. Qualities such as self-reliance, physical fitness and compassion were considered fundamental values that may be less likely to develop in our increasingly technological and urbanised environment. The Outward Bound programme was designed to give individuals an opportunity to discover these inner resources (Ewert 1982). During this same period, offender rehabilitation was also gaining greater public and political support while numerous alternative treatment programmes were being proposed and implemented (Hawkins and Alpert 1989). Outdoor wilderness programmes based on the Outward Bound concept were soon being used for offender groups as humane and cost effective alternatives to traditional institutionalisation.

2.2.1. Overseas Studies

The first study of a wilderness programme to be reported was carried out by the Massachusetts Youth Service in the late 1960s. This programme placed 60 adjudicated delinquents in standard Outward Bound programmes (Kelly and Baer 1968). The experience consisted of 3 weeks of basic skills training and then a long expedition climbing peaks and canoeing lakes plus a solo experience, the final phase of testing including a long distance marathon. One year after the programme their offending rates were compared with a group of offenders matched on variables related to recidivism who had been treated by correctional authorities in a routine

manner. It was found that only 20% of the Outward Bound offenders had recidivated, whilst 42% of the comparison group had relapsed into crime. The positive outcome of this study has been particularly influential for the implementation of further programmes and the justification for their use.

Not long after Kelly & Baer's(1968) initial study, almost identical results emerged from an evaluation of a `Homeward Bound' programme. This programme was similar to Outward Bound in format but was set up expressly for delinquents. Individuals were randomly assigned either to the programme or to correctional schools. Findings showed that after 7-14 months 20.8% of the Homeward Bound group recidivated compared to 42.7% of the control group (William & Chun 1973).

Although a considerable number of further overseas publications have described using wilderness programmes for delinquent groups, there has been a shortage of empirical research which measures their effectiveness. Many of the studies have been purely anecdotal or descriptive in nature (eg Brown and Simpson 1976; Payton 1991; McGrath 1991; Gallagher 1983, Reid and Matthews 1979). Other research has been cited in reviews but is drawn from unpublished dissertations (Cave and Rappaport 1977; Kimball 1979; Cave 1979). Whilst very little later research has focused on these type of programmes effects on recidivism their ability to improve self-concept is better documented.

Cave and Rapport (1977)(cited in Gibson 1979) conducted a study of a 17 day programme which included rafting, rappelling, backpacking and a solo experience. Data was gathered from 19 mentally disordered first offenders using pre and post test measures of self-concept (Tennessee Self-concept Scale) and a general personality inventory (MMPI). The authors described findings of change in social inhibition whereby the clients perceived themselves as being more secure and less threatened after the

course, whilst there was also a change in the dominant and submissive sex-role scales with a significant improvement in the psychological well-being dimensions of reality testing, self-esteem and self worth. Although the wilderness programme was claimed successful in producing 'large changes in a short period of time' the report omitted statistical results.

Similarly, Kimball's (1979) study (cited in Reid & Matthews 1979) was a pre/post intervention assessment of a 14 day outdoor experience with backpacking, rafting, rock climbing and a solo experience. Once again the Tennessee Self-concept Scale (TSCS) was used and a total of 56 delinquent youths from six different wilderness courses were measured for self-concept changes. Results indicated a positive change in all the categories with significant differences found in the variables of personal self and neurosis as well as in the overall scores. In a follow up survey, recidivism rates of 10-15% in the first year were quoted. This figure was considerably less than the 40-60% rate seen among similar offenders as determined by the New Mexico Criminal Justice standard and goals.

Svobodny (1979) compared the self-concept of adjudicated males placed on Outward-Bound with 30 adjudicated males placed on probation. Using the Piers-Harris self-concept scale in a pre/post test measure Svobodny found post test scores significantly increased for the outward bound group but only slightly for the control. A between group comparison of the final scores also showed significant differences. Therefore, although the probation intervention had some effectiveness, Outward Bound had a much greater impact on improving self-concept.

Other evaluation studies have demonstrated that this type of treatment modality can promote similar positive psychological changes in other populations. Two evaluations of a wilderness programme during 1973 (n=124) and 1974 (n=54) (Porter 1975) measured self-esteem using the

Coopersmith self report and behaviour rating scales. The second employed a control group comparison. The subjects were children from economically deprived backgrounds, aged between 8 and 15 years. The programme consisted of two 6 day backpacking trips with one week in between. Porter reported positive change in self-esteem for both programmes and no change in control subjects for the second (1974) evaluation. He also remarked on how the problem solving skills learned in the natural environment were transferred to school and home settings.

Also focusing on the effects of wilderness programmes upon self-concept is a study conducted by Davis -Berman & Berman (1989). Designed to determine the efficacy of an out-of-doors treatment model for psychotic and conduct-disordered adolescent outpatients, the study measured Locus of control (Rotter), Self-efficacy (Sherer), Self-esteem (Piers-Harris) and Behavioural symptoms (BSI: Derogatis) before and after a 10-13 day backpacking trip. As was predicted, a significant change was found in levels of self-esteem and self-efficacy as well as for the BSI. Although participants tended to become more internally orientated on the locus of control these results were deemed to have been non-significant.

From the overseas research published to date, two notable trends are apparent. Firstly, the programmes tend to be targeted at young offender populations and secondly self-concept is popularly used to gauge success. The reason for including self-concept as the primary dependant variable is typically not always clearly explained. However, the underlying tenet appears to be that positive self-concept is an important part of a youth's adjustment in society, which in turn influences a tendency away from further delinquency. Collectively, these studies suggest that significant improvements in self-concept can be achieved for both underprivileged and offender groups. These findings are, however, limited by the problem of not having follow up evaluations and therefore the maintenance of

reported effects are unknown. Also, some of the studies are without adequate control groups, which means that it can not be confirmed that those studies' resulting effects are not produced by other factors unrelated to the programme.

One key study that did employ a more powerful experimental method produced less promising results. Winterdyk and Roesch (1982) randomly assigned subjects in comparing adjudicated youths on a 21 day Wilderness programme with those on a normal probation sentence. The evaluation included pre and post test Jessness Inventory and Piers-Harris self-esteem measures. Analysis of co variance showed significant initial variation in the peer relationship, self confidence and relationship with authority subscales of the Jessness Inventory but this effect disappeared after 4-6 months and no differences were found in self-esteem. Measuring of recidivism 12 months after the programme showed both the experimental and control groups exhibiting equal reoffending rates of 20%. Although not statistically significant there were however, some positive gains in the direction of crime-reduction. The experimental group committed less severe offences and given the number of offences committed by either group, they had fewer charges completed. As the authors point out, these mixed findings contradict similar studies using similar measures, strongly suggesting a need for improved evaluation designs and procedures before any firm decisions can be made about the status of these programmes.

2.2.2. New Zealand Studies

The first New Zealand study to evaluate the effectiveness of an outdoor programme was completed by Fred Bauer, a psychologist for the Justice Department (1982). The study incorporated leisure time and self confidence evaluation measures, plus reoffending rates for 12 probationers who attended one of two outdoor pursuits courses offered by Papakura (South Auckland) Probation Service during 1980. Subjects' ages ranged

between 16 and 25 years and were compared with 2 non equivalent control groups on a normal probation sentence. The courses operated from the outdoor centre near Tuarangi which runs programmes for various groups, led by non affiliated outdoor instructors. Bauer (1982) discovered a subsequent increase in self-confidence for the experimental group measured behaviourally by staff observations and also a self report questionnaire. No clear gains were observed in leisure time use or employment. The decline in reoffending was significantly greater for the experimental group than the comparison group during the 6 months immediately following the outdoor programme. These differences were however short lived and one year later no significant effects on any of the measures could be seen. This poor maintenance of effects is consistent with the pattern reported in the Winterdyk and Roesch (1982) study.

At about the same time, Campbell, Riley and Easthope evaluated the Christchurch Probation Department's 5 day outdoor expeditionary project (Campbell, Riley and Easthope 1981). The study solely used recidivism a measure of success, comparing the number of court appearances 6 and 12 months prior to, and following, the programme. In contrast to the Papakura courses, these expeditions were led by probation staff members and consisted of a week in mountainous bush country plus preliminary orientation weekends. The study showed 87% improvement in reoffending rates for the experimental group, compared with 31% in a matched control population. This trend was found for the full 12 month follow up period.

A later study by Gallagher (1983) describes a course run by Otahuhu probation services which included 4 days of tramping and canoeing around the Coromandel Peninsula. Measuring the degree of offending for the 8 course members, 32 convictions were recorded 9 months prior to the course whereas only two were incurred in the nine months following the course.

However, in the absence of a control group this effect could be ascribed to a number of factors, most obviously the contributing role of probation supervision and guidance.

Another descriptive rather than experimental evaluation was undertaken by Harper (1987). Harper assessed 100 subjects who had participated in various outdoor programmes throughout New Zealand between 1982 and 1986. Impressions of treatment benefits gained from informal interviews included increased self-confidence and self-esteem; better ability to communicate, especially in relation to authority figures; improved understanding and respect for nature; and greater impetus to pursue goals in other areas of life such as employment. Harper (1987) also reported that the average recidivism rate (as measured by court appearances) which was 1.56 before the course, was reduced to .96 afterwards (and within this 45% did not reoffend at all). Once again however, the absence of a control group comparison means that causal conclusions here would be unreliable.

The most recent NZ evaluation published (O'Brien, 1990) includes delinquent youths in its sample and measures variables related to intermediate targets. This evaluation analysed a 10 day expedition set up in 1985 by the Presbyterian Support Services for `at risk youths', where over 200 young people (who had been referred from community groups, the Justice Department, the Department of Social Welfare and other institutions) participated in the programme and some components of the evaluation. Results from a self-esteem inventory devised and validated by the author revealed a significant decrease in helplessness and a significant increase in the coping subscales 6 months after the programme for 72 of the participants that completed both pre course and follow up questionnaires. Reductions in self reported unlawful behaviour, drug use and improved relations with family and friends were also indicated. Whilst this study is

commendable for its large population sample, those who agreed to complete the final forms were less than half of the original data group which raises problems with data validity.

Overall, a summary of previous evaluation studies suggests that certain outdoor programmes can effect positive change in certain areas and can be a viable form of therapeutic treatment for certain groups. Typically evaluations have included self-concept measures, though an array of other dependant variables are also employed. However, few studies have reported on subsequent criminal involvement, despite the implicit assumption that the essential objective of these programmes is to reduce reoffending. From the quantitative reports to date it is clear that effectiveness is no panacea. Very little is known about the impact of these programmes with respect the offenders age and where longer follow ups have been carried out temporal attrition is apparent in both psychological variables and recidivism. Furthermore, the study that employed the most rigorous design showed that its particular programme has few benefits in the measured areas.

2.3. Methodological issues

Aside from the aforementioned limitations of the research, which included the methodological inadequacies of small sample size and the lack of control groups or follow-ups, there are a number of other factors which pose difficulties for estimating intervention effectiveness.

The first is the problem of clearly defining the independent variable. In applied research, where the independent measure is typically broad, numerous unaccounted variables could be quite powerful determinants of the success or failure of a programme. Aspects that need to be considered include the length of the programmes, their format, and their staff characteristics. Some programmes such as that described by Bauer (1982) &

Campbell et al (1982) are as short as five days, whereas the earlier overseas studies (Kelly & Baer 1968; Svobodny 1979; Kimball 1979) evaluated programmes that were typically 2-4 weeks in duration. The design of the programmes also differ. Some have fixed accommodation and teach outdoor skills (Bauer 1982; O'Brien 1990), some consist of backpacking expeditions in natural surroundings (eg Porter 1974, Campbell et al 1982 and Davis-Berman & Berman 1989); and where programmes are longer they have encompassed both components (Kelly and Baer 1968, William and Chun 1973, Cave and Rapport 1977, Svobodny 1979). The nature of the staffing is another factor which may influence outcome and is a difficult variable to assess. Presumably the use of staff who possess outdoor skills and also have experience and training for instructing and supervising delinquents is most likely to promote anti criminal behaviour.

It has been suggested previously that the different results found for the two probation department evaluation studies may in fact be due to these latter 2 factors. Bauer's (1982) study found only short term effects for reduced reoffending whereas this was maintained for the full 12 months in Campbell et als' (1982) study. Lyon (1991) notes that the two programmes were not equivalent. One was based at an outdoor centre and the other in the isolation of a mountainous bush setting. He proposes that the Christchurch programme was more appropriate in that it did not contain the elements of entertainment which tended to occur with the Papakura type programme. He also points out that training probation officers as instructors has the added advantage of ongoing follow-up support, either from the instructors themselves or from their immediate colleagues.

A second issue relating to the independent measure concerns the use of volunteers as subjects. Here, outcome may be confounded by participants readiness and motivation for change if subject selection is not done randomly. Unfortunately this is often an unrealistic demand in most

applied research where the ethics and needs of the population must be considered. Furthermore, there is the consideration that participants who are unwillingly involved may be less likely to experience positive benefits. The programmes are demanding and require a willingness and commitment by the participant to complete the assigned challenges. Such willingness is also necessary if programmes are to operate effectively without placing too many demands on instructors. This highlights the problem of the conflicting needs of strong evaluation designs and maximising the efficacy of outcome by targeting responsive populations. Only two of the studies cited assigned individuals randomly (William and Chun 1973; Winterdyk & Roesch 1982). In both these cases participation was decided by the correctional authorities and a standard correctional intervention applied to the non-selected control group. It seems no individual was involved without consent, although the incentive of avoiding a standard longer sentence was provided. Permitting a randomly assigned assessment is very much dependant on the degree of a correctional authority's interest in the programme and its willingness to incorporate its use into sentencing practices.

A possible bias common to these evaluation designs, is the absence of independent evaluation. Studies have typically been conducted by those involved in setting up and running the programmes, or by those who have faith in the programmes' value in advance. Where this is the case, results can easily be tainted by the unconscious biases of the observers and are thus less reliable. This is especially apparent in those studies which may be seen as being primarily descriptive in nature (Reid and Matthews 1982; Brown and Simpson 1976). Throughout the research it was notable that, although methodological limitations of the general field were pointed out, authors often drew positive conclusions about the value of this form of correctional

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the high stress programme achieved significant changes in MMPI scores, possibly indicating that a sense of danger which draws on survival instincts may be a powerful causal agent for promoting change. One other study has looked at the process underlying wilderness interactions but with non criminal subjects (Kaplan and Talbot 1983). This research suggests the natural setting is the primary factor most essential for precipiating change. Research documenting wilderness interventions will commonly make some reference to how the experience produces positive changes. So far however, there is no formal agreed theory upon which these proposals are based. Drawing on what little experimental research does exist, some thoeretical possibilities which might explain the success of programmes are subsequently explored.

Determining the causal factors for the success of programmes is complex and the source of any programmes success is unlikely to rest on a single factor. Although many elements within these programmes (such as the group's dynamics or improving personal skills, for example) may benefit an individual in some way, aspects selected for discussion here are those more distinctive to the wilderness setting other interventions won't offer. A number of researchers have emphasised the element of challenge which engenders feelings of achievement and hence improved self-concept. Since the natural environment places real and immutable sanctions on an individual's behaviour, it is firstly argued that the experience teaches self disapline (as opposed to regaining control) and secondly that researchers have over-accentuated achievement based explanations, without giving sufficient attention to the role of nature.

Nold and Wilpers (1985) claim the essence of wilderness therapy is the overcoming of a seemingly impossible task, the confrontation of fear, a success experience. The results are immediate and the task is clearly defined and unavoidable. The connection between this and self-esteem is

further discussed where it is proposed that delinquents frequently suffer low self-esteem and lack the confidence in their own ability to effectively cope with the environment. Here, a wilderness environment, with which many are unfamiliar, offers a fresh chance to learn new skills and develop self-confidence.

Similarly, Winterdyk and Roesch (1982) cite the main purpose of their programme as being to improve the self-esteem and self-concept of participants by providing challenging and adventurous activities:

> *"The programs tend to emphasise high impact and stress directed involvement which demands that the individual would excel beyond what they believed capable. This would appear appropriate for juvenile (offenders) as one of the underlying assumptions of the present study and similar programs, was that by participating, the delinquents self-concept and self-esteem would improve and they would in turn adopt more socially acceptable behaviour." (p.41)*

Whilst the majority of studies offer only a brief overview of how the program contributes to change, O'Brien (1991) gives a more comprehensive framework. Based on the Wortman and Brehm(1975)(cited O'Brien 1990) motivation theory it is proposed that individuals believe certain behaviours will lead to certain outcomes, motivating them to deal with new experiences and problems. When these estimations are not fulfilled most people will struggle to overcome the feelings of failure by regaining a sense of control. However when socially acceptable strategies do not work a person may resort to antisocial or illegal methods to obtain these feelings of success. O'Brien concludes that the need to have control and to achieve success-experiences appears to be the key to understanding why adolescents will resort to illegal or anti-social behaviour.

The implication within these perspective's is that wilderness intervention strategies succeed because they allow individuals the

opportunity to regain external contingencies of control. This is clearly illustrated by Knol (1991) when he writes on outdoor programmes that:

> *"delinquents often feel devalued and that control is imposed upon them, rather than feeling in control. They begin to see rules and structures as controls on their lives, so will readily accept 'risk' activities as an expression of regaining control of the system..... The intervention strategy is one whereby the individual can experience opportunities where they can succeed and believe they succeeded through their own decisions." (p17)*

From this, one would assume that the benefit of the programme primarily stems from the opportunity to achieve. The offender, having typically suffered repeated failure, gains recognition of personal success. Whilst this is no doubt partially true of the programme, the wilderness environment in fact imposes its own control contingencies whereby a person must adapt to environmental forces. This leads us to question the utility of a model which relies on 'regaining control' to explain improvement in self-esteem or self-concept. Because the natural environment is such that it can not be modified, the wilderness experience requires concentrating on personal coping mechanisms and abandoning attempts to dominate or control.

The role of control in achievement/success can be clarified by distinguishing between primary and secondary control factors (Sherl 1988). Primary control exists when a person attempts to change the world to fit his or her individual needs, describing the relationship between a person and some external factor. Secondary control exists according to internal contingencies, where a person attempts to fit into the world or bring themselves into line with residing forces. A similar distinction is made by Lazarus and Folkman (1984) in reference to problem and emotion focused coping. Emotion focused coping occurs when the individual perceives that

a challenging environmental condition cannot be modified. Problem focused coping is more likely when there is a belief that conditions can be changed. Sherl (1988) proposes that coping or secondary control can be rewarding since the awareness that they are able to confront challenging activities through self control should give people more confidence in themselves. Secondary control does not merely mean adopting passive attribution's but instead refers more to developing self-discipline.

It is argued then, that the advantage of the outdoors is that it teaches delinquents coping. The benefits lie in learning to operate within constraints without needing to control them. The outdoors does this in a way that is removed from traditional authoritarian structures. A sense of self-worth is developed by feelings of success but operates on a level requiring self-control as opposed to control in relation to some external factor. Self-efficacy thus may also be increased. By doing things they never dared before a person will feel less constrained by previous barriers and fears. Consequently, individuals who gain in self-confidence by exerting self-control may gain in perceived freedom of choice. Therefore, the rewards gained through the outdoor experience can carry over into a belief in future success. Self-efficacy theory (Bandura 1977) maintains that all subsequent behavioural and psychological change occurs through the alteration of an individual's sense of personal mastery or perceived ability to cope. If a person believes they are more competent they will be more likely to initiate and persist in new behaviour.

The experience of coping or secondary control is closely aligned to Kaplan and Talbot's' (1983) wilderness conception, the result of a ten year project exploring the source of beneficial changes in response to outdoor programs. Although using non-criminal subjects, their study is conceivably the most extensive examination of psychological benefits that has been done. Data collection and analysis was from participants, journals and

open-ended type questions during a nine day wilderness program. In contrast to control orientations, the evidence pointed towards the natural environment itself as being the source of psychological change. As individuals began to notice new and sometimes subtle details in their surroundings, their feelings of well-being increased. Feeling in control did not appear to be a common element of the individuals' response to wilderness experience. Participants were more likely to describe feelings of 'oneness' or being 'a part of' one's surroundings, suggesting a harmonious feeling rather than control.

Kaplan and Talbots' findings suggest that the environment has beneficial qualities purely by virtue of being there, and that being amongst isolated and beautiful natural surrounds is therapeutic in itself. The authors explain this as a feeling of compatibility and a sense of union with something that is lasting and of enormous importance:

> *"The wilderness matches some sort of intention of the way things ought to be, the way things really are beneath the surface layers of culture and civilisation." (Kaplan and Talbot 1983p.190)*

Indeed similar claims have been made by others, as Abbot (1991) articulates:

> *"Until recently humans have lived closely connected to the land, increased technology and urbanisation has alienated us from our natural environment. Facing natural challenges, learning basic survival skills and developing respect for and understanding of this ancient relationship reattunes us with our natural roots." (p. 19)*

The evidence implies that at least two important factors may operate in outdoor programs: the activity, and the environmental setting. The activity teaches new skills and offers the individual a sense of achievement. The program is one in which the individual draws on personal reserves of self-discipline and coping to gain a sense of achievement through internal

control, as opposed to needing to manipulate outcome. The feeling of achievement builds self-esteem and self-efficacy while the lesson of coping helps problem-solving ability and increases confidence when dealing with new situations. The rules are unambiguous, have immediate results, and are not imposed by traditional authority structures with which delinquents may often have had negative experiences.

Secondly, the setting within which the activity takes place has positive benefits. Initial feelings of discomfort and sometimes fear gradually make way to increased feelings of harmony and well-being (Kaplan & Talbot 1983). Being amongst nature, it is felt, reattunes us to the natural state-of-things. An individual gains a sense of something fundamental and eternal because the wilderness matches some sort of intention of the way things ought to be, or the way things really are beneath the surface layers of culture and civilisation. For the delinquent, simply removing him or her from their normal environment can be remedial. It allows time out from entrenched behaviour patterns and can provide an important time to reflect and think things through. The natural environment requires a change of outlook. It evokes respect and appreciation of laws greater than those made by society. In the wilderness one is free from the control and coercion of institutions which trigger defensive behaviour.

Most studies have focused on the value of improving self-esteem or self-concept and generally this is explained by the individuals gaining a sense of achievement from having mastered the challenges they face. From a review of a number of treatment evaluations Reid and Matthews (1979) conclude that "in models and philosophies of the wilderness experience the concept of mastery is paramount"(p.176). However, whilst Caves (1979) study on high stress programmes attests to the fact that challenge is an essential component of the programme, equally important are Kaplan and

Talbots' (1983) findings which suggest that the environment is influential just by virtue of being there. The apparent discrepancy between these results may be attributable to the different population samples whereby the second had only a few offender participants. It is possible that non criminal people are more sensitive to this component of the programme and gain greater benefits from it. Alternatively, these conflicting factors could be due to the approach the programmes take. Kaplan & Talbots' results showed that the positive feelings engendered by the setting are dependant on a growing sensitivity and attention to the wilderness setting. Some programmes tend to portray the environment as something which must be conquered by the participants so that living in harmony with nature serves a secondary function (Hogan 1991). Environmental awareness might need to be fostered where these values are not already familiar to the individual.

At this point it may be appropriate to consider the relationship of nature to Maori cultural and spiritual identity. Maoritanga places great importance on the land and the people's link to it. This connection can be understood in terms of a spiritual unity and mutual interrelation of all things; the land is not separate from the self (Hopa 1989). Recently our New Zealand justice system has formally recognised the need for greater bicultural awareness and there has been a movement toward implementing correctional procedures more sensitive to Maori issues and cultural needs (Child and Young Persons Act 1989; Treaty of Waitangi Act 1975). Within this context, feelings of being a 'part of nature' are as important as ideas of achievement in improving self-concept or self-esteem.

Fostering appreciation of the environment could also have other related advantages. As previously noted, studies of outdoor programmes have found that the effects of the experience can dissipate over time (Winterdyk & Roesch 1982; Bauer 1982). One piece of research (McRae 1986;

cited in Hogan 1991) has observed that after involvement in a programme where the environment is emphasised, individuals were more prepared to seek out further wilderness experiences.[3] Motivating offenders to pursue ongoing outdoors involvement would no doubt help to maintain the desired effects of the programme over a longer period. Furthermore, teaching environmental awareness has benefits to society over and above stated programme objectives. Instilling conservation values is especially applicable for New Zealanders in a country which prides itself on its unpolluted land and waters and commitment to environmental concerns. Teaching sensitivity to nature and encouraging the values associated with natural conservation are elements which need to be further explored in this field of research and perhaps uniformly adopted into programme aims.

A better understanding of aetiological factors that translate to emotional change is essential for forming a theoretical foundation. In turn this has the advantage of helping clarify appropriate programme objectives. This discussion shows that within the change process the person experiences (a) improved personal coping and (b) harmony with the environment. The combination of these features is important because they are particularly characteristic of this outdoor/wilderness programmes, possibly holding the key to its effectiveness. Feelings of achievement and success also appear to be important factors. While experiencing success is not unique to this intervention type, outdoor programmes may offer a high impact success experience in a short period of time.

Our discussion has focused mainly on components which contribute to the psychological efficacy of the programme. Factors such as well-being, self esteem or self efficacy are important targets for individual

[3]Whilst all 49 individuals in the two types of programmes expressed an interest in ongoing involvement one week after the experience; a year later only 18% in a `recreation' programme as opposed to 52% in an `environmental' programme had participated in another wilderness experience.

improvement. Whether or not increasing these will lead to reduced reoffending is not yet clearly established. Whilst some theorists have suggested low self esteem is linked with criminal behaviour (O'Brien 1991, Goldsmith 1987) research has not consistently found levels of self- esteem to be lower in criminal populations (Leung & Drasgow 1986). Process components which may lead to reduced reoffending are discussed later on by assessing how well the programme concords with the suggested components of effective criminal rehabilitation programmes.

2.5. Summary

The literature reviewed gives the reader an outline of the existing experimental research which measures the effectiveness of outdoor pursuits interventions. The review illustrates the problem of drawing general conclusions on whether outdoor interventions are a successful method of criminal reform. The main difficulty here is that so many variables within the programmes differ and designs lack experimental power. This is a problem common to many applied research evaluations. While outcomes from previous studies have not been unequivocally positive, the direction of results in most findings are favourable. The majority of research has implied some form of beneficial change whether it be reduced crime or psychological adjustment if only for a limited time. One unknown area is the intervention types effectiveness for an older population. Earlier overseas studies targeted juveniles, setting a precedence it seems, for subsequent programmes. Even the New Zealand studies with probation groups (which are officially adult offenders) had average population ages under twenty (Campbell et al 1982; Bauer 1982). Targeting programmes at young people may stem from the original outward bound philosophy which essentially has aimed to provide a formative experience

in aiding personal development, consequently the programmes could be perceived as most appropriate for youths.

The formative thoeretical discusssion on psychological change links the programmatic type and measured outcome. In this section some ways on how the programme might develop personal adjustment are suggested, with the focus being on those components special to the intervention type. Two factors which appear to be principally responsible for change are positive feelings induced by the wilderness setting and feelings of confidence and achievement for having succeeded in a challenging task.

Because of the limited research available it is not yet possible to identify patterns of variables which may be indicative of a programmes success. For example questions such as the following remain undetermined. How consequential is the level of difficulty involved? Is it important that programmes take place within remote wilderness regions? Are longer programmes more effective than shorter ones? And are they more suitable for certain population types? Whilst this study does not attempt to provide answers on each of these, further research on the general effectiveness of different programme types is obviously needed. By systematically comparing programmes and isolating characteristics common to those interventions producing a greater magnitude of change, it may be possible in future to establish a set of principles which determine a programmes success. The present lack of knowledge of these factors highlights the immediate necessity for individual programme evaluation.

3. PROGRAMME DESCRIPTION & RATIONALE

The Christchurch community correction department's current programme has maintained its original format, normally 5 days long, with an afternoon orientation session for all participants the week prior to departure, and follow-up shortly after completion. Individual programmes vary slightly according to team leaders' specific skills, so that whilst some emphasise the tramping outdoor survival aspect for example, others will combine cycling, caving, or rafting with walking, or alternatively concentrate on teaching skills such as abseiling and rock-climbing. The courses are offered on a regular basis approximately every month.

Although it is not possible to give a standard description for all programmes, each is located around Canterbury or the West Coast regions of the South Island, utilising tracks and walkways near the southern divide. This is isolated alpine country with native beech forest and many mountain rivers and streams. Typically an expedition will have included tramping, carrying food and provisions for the five day period, and sleeping in tents or basic shelters.

Expeditions are organised and run by probation officers using a core group of more experienced instructors along with a number of co-leaders. A series of training courses are given for new members directed by qualified leaders within the department. These are designed to familiarise new members with the procedures, systems and contacts used in organising and running an expedition, whilst also providing practice in activity skills such as rock climbing, abseiling and snow-craft.

A summary of programme objectives given by the department state the following aims: i) to provide positive challenges ii) to increase

awareness of and involvement in alternative leisure pursuits iii) to increase confidence and self-esteem and iv) to energise participants into positive action. Course organisers further stated that the programme intends to provide a success-experience and encourage a positive attitude and better understanding of the probation department and authority figures. It is also implied that the program can help people develop personally, by revealing new ways of dealing with problems so as to reduce the chance of them becoming involved in criminal activity again (Campbell et al 1982).

A key indicator of the Christchurch Justice Department programmes effectiveness comes from a previous evaluation of the same programme (Campbell, Riley and Easthope 1982). This study found course participants reoffending rates were substantially reduced and the matched control group with whom they were compared showed very little improvement. There were however a number of methodological weaknesses apparent. The first was that it used only 16 subjects in its sample. This small number of subjects increases the possibility the results may be due to chance; it also limits the logical generalisability of the findings. Secondly statistical significance was determined by calculating the equality of proportions between groups. This statistical technique, although applicable to the discrete nature of the data, does not have the same statistical strength as other parametric methods of analysis (de Vaus 1990) Finally the individuals were matched by a scoring guide given to probation officers. It was their task to select suitable candidates for the control group. This may have introduced a bias into the selection procedure.

Rather than follow the same procedure as Campbell Riley and Easthope and use a single measure of recidivism a number of other needs were considered. The first was the desire to place the programme into an overall theoretical context. The body of literature covering the

rehabilitation issue revealed an important resource for developing effective treatment programmes and evaluating existing ones. More recently, a number of principles for effective reform have been isolated using a meta-analysis technique to systematically categorise programme components and reported outcomes. Research on criminal reform programmes has suggested that characteristics of interventions are more important than the intervention types. Instead of viewing the programme as an undifferentiated entity it may in addition be useful to view it in terms of these given characteristics. This assessment method links progamme components and experimental outcome which is helpful for understanding the processes of this rehabilitation method.

When measuring recidivism there is the problem of not having a formal theory for which to guide researchers in recidivism criteria (Hawkins and Alpert 1989). Reoffending can be defined numerous ways, for example self reported crime, rearrest, reconviction or reincarceration rates are each acceptable measures of reoffending but give very different reoffence data. The time span over which further criminal activity is recorded also varies considerably. Previous outdoor intervention evaluation studies have generally judged recidivism in terms of gross reconviction rates, which is an all or nothing rating of subsequent criminal activity (Kelly and Baer 1968; William and Chun 1971, Winterdyk and Roesch 1982). As the sole measure of change this definition of recidivism is insensitive to subtleties of improvement such as less frequent reoffending. Campbell et al's (1982) earlier evaluation study measured reoffending by a pre and post intervention rating of improvement. Since average reoffending percentages were not provided this information is limited when comparing the results with other research. Including a number of measures of recidivism is both more informative and has greater

experimental power, for consistency across several types of measures tend to strengthen results.

Since the objectives of the Christchurch Justice department's programme include goals aside from lowering recidivism it is appropriate that other measures are included in the design of an evaluation procedure. A second objective of the study was to assess intermediary benefits related to the secondary rehabilitation goal, that is, ways in which the programme may benefit the individual. Other research on wilderness programmes has measured self-concept via self report and found positive change on this variable (Svobodny 1979; Cave and Rapport 1977; Kimball 1979). Likewise improving self-esteem and self confidence are cited as intermediary target goals in this programme. With these factors in mind, related variables were chosen, consistent with both these and the theoretical discussion. Here, it is proposed a state of well-being might be facilitated by the natural setting whist the activity and success experience amongst other things might develop self-efficacy.

The evaluation goals of this programme can be summarised as follows:

1. To assess the programme within the broader context of offender reform and how closely the programme fits with known principles of effectiveness.

2. To assess the effectiveness of the programme on a behavioural measure of reoffending and determine whether results replicate previous findings by Campbell et al(1982).

3. To assess the extent the programme benefits the individual by promoting positive psychological change; explore intermediate components which may be useful for a theoretical understanding of how the programme works and gain feed back on whether participants consider the expeditions to be worthwhile.

The evaluation procedure incorporates three separate evaluation designs for each of the assessment goals. Firstly two sets of theoretical principles proposed by McLaren (1991) and the other by Gendreau and Andrews (1992), are followed for a qualitative assessment of the programme. Two individual experimental studies investigate recidivism then self reported change.

While subject selection would be best carried out randomly, thus improving the power of the design, the number of referrals to the programme were too small to allow for this. When randomised procedures prove too difficult to implement an alternative is to use quasi-experimentation. Choosing a control group by matching subjects on variables known to relate to the independent variable is one valid design alternative. The past and continuing accent on criminal prediction in Forensic studies provides a valuable source of data relating to recidivism. This makes the technique a more feasible one in terms of matched validity than it would be for many other matched dependant measures. Personality and self-concept type measures are too broadly defined to attempt to match a control group on relevant factors which may influence the outcome. A pre test measurement taken before and post test measure taken after the intervention gives a measure of temporal change which indicates the independent variable (the outdoor intervention) is responsible for changes in the dependant variable.

The best way of achieving a reasonable sample size given the time limitation of this project was to do a retrospective study. This allowed for a twelve month follow up measure. Data was therefore drawn from previous programme's participants who had completed expeditions during 1989 and 1990. The study on psychological benefits had a separate population sample of those who were currently undertaking courses.

3.1. Hypotheses

The aims of the present study and the related hypotheses are specified as follows:-

Aim To assess how the Christchurch programme fits within the broad context of offender reform and specifically the principles of effectiveness.

Hypothesis 1: That the outdoor programme will be consistent with known principles of effective programmes as outlined by McLaren (1992) and Gendreau and Andrews (1992)

Aim To assess the effectiveness of the Christchurch programme in reducing reoffending

Hypothesis 2.

a On a gross measure of recidivism (reoffend vs not reoffend) an experimental group will reoffend significantly less than a control group, after twelve months following an expedition.

b Measuring recidivism frequency by i) total number of court appearances and ii) total number of offences for which they had been charged; an experimental group will reoffend significantly less often than a control group twelve months following an expedition.

c. Measuring severity of reoffending whereby a rating of the seriousness of subsequent crime in terms of sentence is added to the number of court appearances over 12 months, will find the experimental group rate significantly lower than a control group

d. In a temporal pre and post intervention comparison the experimental group will reoffend significantly less often after the intervention: i)Average rates of offending 6 and 12 months prior to the intervention compared with

average offending rates 6 and 12 months following will be significantly lower for the experimental group only. ii) comparing individual offending rates 12 months prior to he programme and 12 months following it (which corresponds to Campbell et als recidivism criteria) will show a significant difference between the experimental and control groups on improvement.

Aim To assess the intermediary components of the Christchurch programme in order understand what benefits the programme may have for the individual and evaluate whether these factors are relevant components within the process of change.

Hypothesis 3

a. There will be a significant improvement in well-being between an assessment made prior to the experiment and another assessment made following it.

b. There will be a significant improvement in self-efficacy between an assessment made prior to the expedition another assessment made following it

c. Comments from participants following the expedition will be favourable.

4. EVALUATION

4.1. Effective Rehabilitation - How the programme fits with effectiveness principles.

The most recent research on correctional treatments strongly suggests that the success of a programme depends on certain programme qualities. It also indicates that while a programme within a category (such as outdoor wilderness programmes) may be found to be successful the category is less indicative of success than the general programme's adherence to a set of principles (Gendreau and Ross 1987; Andrews et al 1990; McLaren 1992).

Effectiveness principles have been isolated by finding common components across those programmes shown to be most successful in reducing crime. Within this process aspects such as the methodological strength of the research designs and the magnitude and persistence of effects are considered (Andrews et al 1990). The technique used to decipher these principles is referred to as meta-analysis. This is essentially a statistical synthesis of a number of research studies which provides a measure of how much change has taken place as a result of interventions. The objective of this evaluation is to investigate how well this programme conforms with these principles.

4.1.1. Method and Dependant Measures.

One of the clearest guides to what these effectiveness principles are is provided in a summary by McLaren (1992) of the meta-analytic findings to date. McLaren cites sixteen principles which have been found to underlie those interventions which are associated with reductions in reoffending (Appendix 1a). These general principles are used as a

framework to clarify some of the positive qualities of the programme and gain an idea of how many the programme contains.

Recently a scoring guide for correctional programmes has been published by two of the leading scholars in this field (Gendreau and Andrews 1992), the inventory details an extended list of effective programme characteristics for scoring both intervention effectiveness and evaluation strength. Within this a list of 24 acceptable programme target characteristics are given (appendix 1b). This list is more explicit than McLaren and indicates a numerical rating of effectiveness. Although a number of these principles overlap, it was decided to use both of these evaluation guidelines- McLarens because it offers a broader set of characteristics which includes types of programmes not only target principles, and Gendreau and Andrews because of its specificity and scoring system.

Some types and targets of interventions which are consistently associated with less successful outcomes have also been identified by researchers. Areas in which the programme may fail are also looked at. Observations were based on discussion with expedition leaders, probations officers and participants, and drew on previous evaluation reports of similar programmes.

4.1.2. Findings

Principles from McLarens (1992) review

Of the sixteen general principles stated by McLaren some appear pertinent to this particular programme. Those which appeared relevant are listed below and a consideration made of the extent to which this programme fits with these principles:

- **Authority Structures** *'Authority structures with clear rules and sanctions are employed. The use of authority reflects a firm but fair approach rather than interpersonal domination or abuse.'*

The programme is very structured and each member of the group must stick to clearly defined tasks. In the wilderness setting rules are outlined and enforced by both the leader/instructor and by the natural environment itself.

Participants must accept the authority of the leader and obey the rules or else put their own life and someone else's in peril. Nature has its own authority and rules and sanctions are declared by these 'natural laws'. This is perhaps one of the most important qualities of programmes of this type. They have the advantage of immediate and unambiguous contingencies of reinforcement not enforced by a social institution for which their previous experience may often have been wholly negative.

- **Modelling and reinforcement of positive alternatives** *'Staff model and reward prosocial alternatives to criminal styles of thinking, feeling and behaving'.*

One of the stated objectives is to increase awareness and involvement in alternative leisure pursuits. Outdoor programmes model a challenging activity for which the offender can take risks and test their skills in prosocial ways. It aims to engender feelings of achievement for

actions both exciting and law abiding. Because staff are trained to work with offenders it may also be presumed that they will be aware of appropriate behavioural modelling and encourage prosocial attitudes and dynamics with groups.

- **Training in problem solving** *'Offenders are trained in practical, personal and social problem solving skills which enable them to cope better with personal and social difficulties'.*

Although problem solving is not formally addressed within the programme it is possible it is facilitated indirectly. As previously suggested in our theoretical discussion the setting encourages internal controls and coping skills. These may in turn make the individual better equipped to deal with new problems via improved tolerance and self-control. Outdoor programmes give an opportunity to reflect on personal difficulties and perhaps see them more clearly out of their day to day context. Often a person can gain a better perspective on problems when they take time away from those things they were previously unable to see solutions for.

- **Community Contacts** *'Intervention staff use community resources'*

Establishing positive links with the community is one way of improving support systems which encourage anti criminal behaviour. This is consistent with Hirchi's control theory(1969) which proposes that if the bond between the individual and society is strong the individual is less likely to violate societies norms. On its own, the programme does not actually operate within the immediate community context. If seen as a component of the rehabilitative process, one that catalyses further growth and change, the Community Corrections department's program fits within the community construct. The wilderness experience teaches new skills in leisure time use and clients have continued contact with the department as

a part of their supervision, the programme can therefore be integrated into a total spectrum of supportive experiences.

- Staff behaviour and staff offender relationships *'Intervention staff relate to offenders in warm, flexible and enthusiastic way. Empathetic relations between correction staff and offenders are encouraged.*

Although it is difficult to assess this factor and especially to make a generalisation for all team leaders in various programmes, the evidence indicates that the programme does contain these characteristics. Two things point to support this. Firstly, we would expect team leaders to have good interpersonal skills if chosen for the position of a probation officer and secondly fostering a positive relationship and attitude toward the probation department and personnel is one of the expressed objectives of the programme.

The factors listed here are general guidelines only indicating more general concepts and involve a degree of subjective interpretation. These principles won't accurately predict programme efficacy but do give an indication of the programmes strengths. This is important for tying suggested benefits in outdoor literature and those on effective reform. The discussion in chapter 2.4 proposes benefits particular to the intervention type. The effectiveness qualities outline other benefits the programme may have aside from these. The natural authority of the environment and teaching problem solving through coping are features inherent to any wilderness interventions. Working within a community context, positive staff and offender relationships and appropriate modelling of alternative behaviour are principles met within this programme but won't necessarily be present in all outdoor interventions.

Effective targets given by the Gendreau and Andrews (1992) scoring guide.

Another method of linking the programme to effectiveness principles is to follow Gendreau and Andrews' outline of suitable programme targets. As a guide for effective interventions the inventory states that there should be at least 3 primary programme targets that fall within their given set and where there are further targeted aims 80% should be consistent with these principles. Twenty four suitable targets are given.

Because this programme's objectives are not narrowly defined, the pertinence of these target principles or conversely the extent to which the programme may target inappropriate goals could be interpreted flexibly. The relevance of the chosen factors was determined in the light of the objectives given by the Justice department, comments from expedition organisers and factors which have been identified from other related research.

Four principles appear appropriate to the programme:

-*Improves attitudes toward authority figures - specifically the probation dept.* This is included as one of the programmes stated aims. Interacting with probation staff in an environment removed from established authority structures (although still within a leadership/mentor capacity) can foster a rapport otherwise unobtainable in the traditional 'us' verses 'them' attitude toward formal legal hierarchy.

-*Encourages constructive use of leisure time.* Also a stated objective, the programme clearly teaches alternative prosocial leisure skills. These involve elements of risk and excitement, qualities often said to be attractive to youths who participate in delinquent behaviour (Andrew et al 1990).

-*Engenders self-efficacy.* Previous evaluations of similar wilderness programmes have shown participants experience improved self-confidence(Winterdyk and Roesch 1982), feel more secure and less threatened(Cave and Rapport 1977) and increased global self-efficacy (Davis and Berman 1989). This may be explained by succeeding in a difficult task and overcoming feelings of tiredness and discomfort, the individual gains a sense of having achieved something from their own sustained efforts. This sense of personal achievement carries over to improved feelings of general competence and willingness to try new tasks.

-*Improving problem solving skills.* As noted previously, the programme may facilitate problem solving by developing new strengths and skills and improved personal control. Certain outcome studies have reported significant changes on this variable (Cytrybaum Ken 1975; Gatson et al 1978 cited in Gibson 1979).

To a lesser extent the programme may also be effective in:

-*Promoting prosocial skills.* Arguably the programme promotes prosocial skills by teaching constructive leisure time use as well as encouraging co-operative interaction and demanding personal responsibility. For example individuals must learn to take care of their own belongings and be responsible for their actions and at the start and the end of the day co-operate in such tasks as food preparation, cooking, cleaning, setting up camp and finding wood.

-*Improving interpersonal skills.* Most research has emphasised the value of group co-operation and trust that the programme provides (see Gibson 1979 for review) and how members learn to deal with interpersonal contact more effectively. One report found that those who were superficially gregarious as measured by the MMPI became more genuine and self disclosing and those inhibited tended to open up more. The

reduction in social alienation was felt to be a result of the intensive cooperative living experience. Other descriptive evaluations(Hunter 1991; Gallagher 1983) have supported the enhanced interpersonal skills notion.

Four factors within the set are concordant with suggested programme aims and two possibly concordant, indicating the programme meets the three target criteria. The programme objectives also state aims to provide a success experience and increase self-confidence and self-esteem. Allowing for these further targets not included, the programme still appears to fit with the 80% requirement given. Once again however these target guidelines given are not a conclusive method of prediction. Like McLaren's principles the target characteristics are drawn from an amalgamation of correctional programmes and details of such things as the effect of combinations of components will be lost. Moreover principles may change when further research clarifies additional conditions associated with reduced crime.

Inappropriate qualities.

Reviews have cited factors considered less effective in reducing crime (McLaren 1992; Andrews et al 1990). It is important these are also considered within the evaluation and areas in which the programme may fail discussed.

-*Self- esteem* In both earlier and more recent meta-analysis reviews (Gendreau & Ross 1987; Andrews et al 1990) one clear outcome was that targeting self-esteem on its own will not bring about reduced reoffending. Self-esteem elevation has been a primary focus in both previous wilderness programme research[4] and also targeted within this programme. Some studies have used only this variable as a criteria measure of success (Kimball 1979; Svobodny 1979; Porter 1975). Since targeting self-esteem

[4]Operationally the self esteem and self concept constructs are identical.

without reducing antisocial propensity is singled out as one of the less promising factors for behaviour change, the importance given to this variable may be misplaced.

-*Group cohesion* The authors also warned against increasing the cohesiveness of antisocial peer groups. Group interaction is one factor consistently stressed in the literature on outdoor wilderness programmes and has typically (and maybe inappropriately) been considered a major contributor to beneficial change (Gibson 1979, Brown and Simpson 1976, Nold and Wilpers 1975). Since group interaction cannot continually be monitored within this type of intervention, there is reasonable opportunity for the offender participants to develop further criminal group associations. Close supervision of the group process and instructors skilled in fostering appropriate non-criminal attitudes is needed for this factor to be minimised. Alternatively because these particular expeditions are short, giving less time to establish close bonds, this inappropriate factor may be less pronounced. Moreover, it is not something the Community Corrections department's programme actually purports establishing.

Risk, need and responsivity. Andrews et al's (1990) assessment of effective interventions determined the principles of need, risk and responsivity as qualities which further decide the effectiveness of the service. The risk principle refers to aiming programs at high rate offenders (which requires more knowledge of criminal prediction and the dynamic measure of risk). The need principle suggests that offenders show better responses when targets of interventions are those shown to have direct links with criminal conduct eg substance abuse, and the treatment modality focuses on altering criminal cognitions and behaviour. The responsivity principle depends upon knowledge of how treatment may be differentially effective with different types of people and offenders are matched with interventions that suit their level of abilities and learning styles. As our

sample description in study two later shows, the majority of participants fall into high risk categories but the programme does not target criminogenic needs or appear to provide differential treatment.

Outdoor programmes whilst offering a number of benefits that may in turn reduce antisocial propensity are not solely directed at criminal problems. Set up as general self improvement and confidence building experiences, the methods and concepts of outward bound have been applied to criminal groups rather than designed specifically for their needs. Another limitation is the lack of knowledge of or attempt to target individuals for whom the programme is more effective. Do all offenders experience positive benefits or are there certain groups for whom the programme has greater impact? Outdoor wilderness programmes have been popularly aimed at young offender groups and treatment effectiveness is more clearly established for juvenile populations. It is not yet clear whether the programme is beneficial for adult populations or whether improved self-esteem, motivation and self confidence are suitable in general, for altering criminal conduct. Currently the programme is applied quite broadly, when perhaps it should be focused on individuals who require change in the targeted areas, namely those more likely to show reduced antisocial propensity if levels of self confidence of self-esteem are increased.

The list given here is not necessarily definitive. Arguably other principles given could also be pertinent. For example it is stated that one of the most important principles is that programmes are based on a social learning model. Essentially social learning theory understands deviant behaviour to be a consequence of an individual's environment and this can be learned or changed. Teaching new prosocial actions and cognitions using positive behavioural reinforcement techniques sees that desired behaviour is encouraged and undesirable actions become ineffective or

loose reinforcement value. To some extent the intervention fits within this construct because if focuses on positive behaviour and teaching new skills, rather than unwanted actions. However behavioural or cognitive behavioural theory based on social learning is not taught within the programme and the intervention does not use the rehabilitation methods normally associated with these approaches (eg. the use of token economies, monitoring risk patterns and establishing reward contingencies). Whilst prosocial modelling and problem solving fall within the social learning construct and are included within our list of principles, the programme could not be considered strictly based on social learning theory and methods.

4.1.3. Discussion

To formulate a theoretical impression of the effectiveness of the programme this section has considered both at the qualities it contains and the areas in which it fails. This was assessed firstly by looking at the number of appropriate 'success related' factors the intervention targets and then examining programme characteristics known to be less promising for change. Measuring the programme in terms of effectiveness principles has indicated a number of consistencies with suggested successful components. Possible short comings of the programme are also made apparent. Hypothesis one as stated is accepted but with note of caution regarding possible weaknesses. In accordance with the principles and targets outlined it is concluded the programme is a moderately effective method of offender reform.

What is known about effective programmes has important implications for the theoretical focus of this field. If researchers could look for qualities in this type of milieu that may be directly linked to findings on successful criminal behavioural change, it would help substantiate arguments in favour of the programme's value. Improving problem

solving through coping, using leisure time more constructively, developing a positive attitude toward and acceptance of authority are factors suggested to be contained within the intervention which are found to be correlated with reduced crime.

So far self-esteem has been one of the most popular intermediate variables targeted within programme research both as an evaluation measure and as a theoretical justification for subsequent behavioural change. In relation to the meta analysis findings it would appear the singular focus on this variable may be over-emphasised to the neglect of other positive features of the programme. The effective principles given however centre exclusively on the goal of crime reduction. Reducing reoffending is an essential objective in correctional programmes but arguably humanitarian goals are also imperative. Rehabilitation objectives might embody self-esteem and self-concept improvement through these factors having importance for aiding individual adjustment.

The principles stated are suggestions of effective reform given the literature to date. Based on common components of successful interventions they suggest factors which are effective but these components are not immutable and may be revised as further research clarifies other conditions (McLaren 1992). The meta-analysis technique of deciding these, bases its investigation on elements targeted for change (Andrews et al 1990), but can not determine how effectively the programmes judged meet these targets. This method of evaluation is therefore limited by the accuracy of meta-analysis processes. It would be erroneous to determine the utility of a programme judged entirely on these principles, though the method places the programme into a broader rehabilitative context which is an important integration outdoor intervention research has lacked.

4.2. Measuring Recidivism

Because each course varies so greatly on its independent variables whereby length, type of activities, group process, staffing style and client group vary; the question of programme effectiveness should be asked for each programme. In 1982, Campbell Riley and Easthope evaluated the Christchurch Justice Departments programme and concluded that within the limitations of their methodology, the course participants showed a substantial reduction in reoffending as compared with a matched control group. This study also uses a matched control group design with the aim of testing whether these results would be replicated.

Prediction research on criminality, which looks at factors associated with recidivism, was consulted in order to choose suitable characteristics on which a control group could be matched. The following section outlines those factors claimed to be the strongest predictors and which occurred most frequently in related outcome studies were isolated. A number of relevant predictor items are discussed, although choices were confined to those variables that could be accommodated within official criminal history records.

4.2.1. Review of Crime Prediction Findings

Relevant literature showed that factors considered most related to reoffending were by no means uniformly agreed upon. For this reason, a large number of prediction studies and reviews were consulted to enable the selection of those correlates which are presumably fundamental to reoffending and hence a more valid matched design. A summary of those factors most widely supported as predictors of reoffending follows. The

items are listed in order of the strength which they were supported in the literature and justification source is described.

Age

One of the most significant findings of research into recidivism is the relationship between age and criminal activity. The U.S Research Council found that 25-45% of urban males are arrested by the age of eighteen, and 50% of all criminal offenders have records by that age (Holden 1986). The number of youths participating in criminal activity shoots up in adolescence, peaking at age 17 then falls off dramatically, to 50% of the peak rate by age 23. Similar patterns have been found in other studies (Schmidt and Dryden-Witte 1988). Hirschi and Gottfredson (1985) noted a rapid increase in the level of crime during adolescence, peaking at approximately 20 years and a substantial decline from this time on. Analyses by Haapanen(1990) involving 2800 wards of the California Youths Authority showed a pattern of declining criminal participation as they got older, with more and more serious delinquents dropping out of crime and of those that remained active, crimes were committed at an increasingly lower rate. Two studies using New Zealand populations (Anderson 1989 and Oxley 1979) found age to have a greater impact on recidivism rates than any other variable. Age is a crucial component that should be held constant if we are to establish equivalent experimental and control populations.

Criminal history

The age at which a person is first convicted and the number of prior convictions are arguably the two most useful variables for criminal prediction. Both are easily accessible within official criminal records and are reputed to be robust predictors. In a review of 177 prediction samples (Pritchard 1979), these two items were found within the five that were listed most related to recidivism. They are also included as fundamental variables in Hoffman and Becks Salient Factor Score (Hoffman and Beck

1974). This is one of the best known and influential works on prediction and is used by the United States parole Board

a) Age of first conviction. Offenders who commit their first offence at a young age have a greater chance of reoffending than those who have no pervious criminal history. Pritchard (1979) compared age at first arrest with outcome on parole. He found first arrest before 18 was consistently related to recidivism and after 21 consistently non-related. Again, looking at prison populations, Koller and Godson (1980) calculated an average age of 14 yrs for inmate recidivists as opposed to 21 for first time inmates. Greenwood's extensive research on selective incapacitation included conviction prior to age sixteen within the seven variables index devised to accurately identify the persistent offender (Greenwood 1982). A sample of 11,937 prisoners to test the utility of the Greenwood scale as a prediction instrument, revealed that the strongest correlates of criminal behaviour were i) conviction as a juvenile and ii) prison term as a juvenile with each of these variables being approximately as strong predictors as the entire Greenwood scale (Decker & Salert 1986). Age of first offence has also been cited as one of the few predictor variables which improved predictive accuracy (Willbanks 1985; Gottfredson and Gottfredson 1985).

b) Number of prior convictions. Delinquency is often said to be best predicted by taking into account prior delinquency (Monahan 1981). A large number of studies have cited prior conviction as a key variable in prediction indexes (Glueck 1950; Hoffman and Beck 1974; Greenwood 1982; Pritchard 1979; Schmitt & Dryden-Witte 1988). These findings are consistent with career criminal theory, whereby a disproportionate amount of crime is committed by a few offenders. Mannheim and Wilkins (1985) found that the number of previous convictions was the best individual predictor of recidivism. Similarly Buikhuisen and Hoekstra (1974) analysed 22 variables with which to predict reoffending and found that the number

of previous convictions was one of two variables that contributed to reoffending in any significant way. Data drawn from a NZ population also supports these findings. Oxley's (1979) study of probationer's reoffending patterns concluded that those under 20, without work and with a previous reoffending history were significantly more likely to reoffend than others. Anderson(1989) found the presence of more than 3 previous court appearances to be among four of sixteen variables positively associated with reoffending.

c) Type of offence. Other criminal history variables include type of offence and prior penal experience. There is some uncertainty as to the value of offence type as a predictor. Although Pritchard's study revealed type of offence to be a stable predictor of recidivism, a breakdown of the categories suggested that only auto theft was frequently associated with reoffending to a statistically significant degree. Pritchard concluded that "type of offence is a stable predictor of recidivism but the specific offence (with the exception of auto theft) which best predicts recidivism varies from jurisdiction to jurisdiction and/or from time period to time period" (Pritchard 1979 p.18). Thus, isolating and matching on type of offence variables such as robbery and forgery that tend to be associated with greater offence rates (Millar 1982; Schmidt & Dryden-Witte 1988; Gottfredson & Gottfredson 1985) and those more severe crimes such as sex offences and homicide that tend not to, (Haapanen 1989; Schmidt & Dryden-Witte 1988), would not significantly improve group equivalence.

d) Prior imprisonment. Prior penal experience has sometimes been stated as having predictive use. Glueck and Glueck's (1950) early work found it to have one of the highest correlations with further reoffending; previous imprisonment is incorporated within the Salient Factor Score (Hoffman & Beck 1974) and Pritchard (1979) stated 78% of the studies that contained this variable found it related to reoffending.

Given these findings it was decided auto theft and previous imprisonment, although not consistently rated as the most important predictor items, should be included as control measures in this experimental design. Some outcome studies have shown them to improve on predictive power and the ready accessibility of this data from official criminal records makes its inclusion for matching relatively simple.

Ethnicity

There is some uncertainty as to how related ethnicity is to recidivism. Pritchard (1979) concluded that race is not a good indicator of future crime since it was found to be predictive in only half the studies reviewed. New Zealand research, important for its population relatedness, gives similar inconsistent findings. Oxley(1979) found race had no significant effect on the likelihood of reoffence whereas Anderson(1989) found it to be a less important but significant predictor. Race is therefore included in the data as a control but since it appears to be less important, equality on this variable was not given priority.

Social History

While a range of variables relating to social and personal background are found within predictive indexes, employment status and history of drug and alcohol appear to have the most impact on determining likelihood of reoffending. A lack of employment or unstable work history relates to subsequent criminal activity in the prediction research of Greenwood (1982), Hoffman and Beck (1974), Glueck and Glueck (1950), Anderson (1989) and Pritchard(1979). Greenwood, Hoffman and Beck and Pritchard all cited drug use as a relevant explanatory variable and Pritchard found alcohol abuse to be amongst the seven most stable predictor items. Alternatively though, Gottfredson and Gottfredson's (1985) study found employment status added little to overall predictive power and Decker and

Salert's (1986) application of the Greenwood scale found both drugs and alcohol to be very weakly associated with recurrent crime.

Ideally a close match between experimental and control groups on many variables would improve equivalence between populations and reduce the likelihood of extraneous variance effecting differences. Unfortunately official criminal records do not contain information unrelated to actual offence history. Although employment status is listed on the Wanganui computer we can not be sure how meticulously this is updated or whether employment is stable. Drug and alcohol abuse could be inferred by charges listed but at the risk of making inaccurate guesses.

Limiting the number of our matching items may not greatly diminish matched validity when the extent of predictive efficacy gained by adding subsequent variables is considered. A common finding in multiple regression research is that little predictive power is provided by the inclusion of more than one the first few variables. This phenomenon is clearly illustrated in Gottfredson and Gottfredson's (1985) research for which variables were classified into four categories relating to present offence, criminal history, social history and institutional adjustment. Using a series of stepwise regressions that entered one variable at a time, whereby those that did not add to the predictive power were excluded, they demonstrated that including different groups of variables namely criminal and social history with present offence, resulted in similar predictive efficacies. Including only 5 variables, 2 related to present offence and 3 to criminal history allowed them to predict as well as any other scheme.

The final choice of variables were age, age of first offence, number of previous offences, type of offence (car theft), length of sentence and prior imprisonment. These were drawn from statistical analyses on reoffending rates which have included intrinsic, person and criminal variables in their

pool. From these those variables that have most frequently been shown to be the best predictors were chosen and priority given to those more powerful items. Because the experimental method required use of official criminal records those factors not available from these were omitted. The research indicates that the most important items can be found within this data and that large numbers of items do not greatly improve predictive validity. For this reason we can be reasonably confident that our selection technique has methodological validity.

4.2.2. Method

This study is based on Campbell et al's (1982) previous evaluation design but differs in two ways. Firstly it is retrospective whereby the sample consisted of those who had completed the course over the preceding two years. Due to the time constraints of the project, a retrospective study was required for adequate recidivist follow-up. It also allowed for a larger sample population to be drawn. Campbell et als was a procedural evaluation so that data was collected closer to the time of the program. The difference between these two methods is minimal in terms of a valid design although in theory procedural evaluation has the advantage of being able to monitor other environmental variables which may influence the outcome. Secondly, the matching strategy in this study relied exclusively on official criminal records whereas in the Campbell et al study probation officers selected control subjects. Having probation officers act as intermediaries was rejected for this design because of its possible subjectivity. The data does however reduce our matched variables to those which have been officially recorded. Consequently our range of matching items could not be as broad. Arguably this does not appear to limit the accuracy of matched data (Gottfredson and Gottfredson 1985). Thirdly Campbell et als (1982) findings were reported only in terms of percentage of individual

improvement on offending rates[5]. This study measures recidivism in more than one way.

Procedure.

A computer history (PRN) from the Wanganui computer data base was obtained for all the participants involved in the course over the preceding two years. Age, type and date of birth were noted. A selection of possible control subjects were gathered from the Christchurch probation department files[6]. These were chosen for similarity in age, date and severity of sentence to those in the experimental group.

A sample of approximately 300 was collected from the files for the control group pool. Going through in alphabetical order, these were selected on face value similarity in age and the time and type of conviction to those in our experimental group. Once a sufficient number was gathered (about 6 per experimental subject), PRN numbers and criminal history print-outs were obtained for each. The computer histories for this and the experimental group were then summarised and coded into a database.

This list was then sorted hierarchically giving priority to age, then age of first offence and finally number of previous offences. The control group was sorted according to closest match found for each experimental subject on these variables, as well as type of offence, length of sentence and whether or not they had been previously imprisoned.

Sample

Our experimental sample initially consisted of all course participants who successfully completed the probation department's

[5]The number of offenses prior to the intervention were counted and compared with the number committed over the same period afterwards.

[6]These files hold a record of all convicted offenders who have been under supervision of the ChCh Probation department in the past ten years. They briefly state a persons name, age, date of conviction and the associated offence.

programme during 1989 and 1990. Subjects were selected according to the criteria of: a) a court stipulation recommended to the court by their current probation officer whereby completing the course is included as a part of their probationary sentence or b)voluntary recruitment, either from the promotional material displayed around the department or were made aware of the program by their probation officer. All interested probationers who were physically fit were accommodated. A smaller number of the population came from Christchurch Women's, Paparoa or Rolleston prisons. Most of these could not be included in the final analysis since a comparative control sample was not readily obtainable from the Community Corrections department's file system.

Using the files for selecting control subjects required reducing the parameters of the sample. From our initial list of participants the following categories were excluded:

a) Participants not on probation or serving a prison sentence current to their involvement in the programme.

b) Those serving a prison sentence longer than 12 months. Probation files do not include a representative prison population sample. Those serving sentences less than 12 months usually come under the jurisdiction of the probation service (Criminal Justice Act section 77a) and if granted early release some prisoners serving longer sentences will have probationary supervision but in the latter case these numbers are not large enough to give an adequate selection of suitable control subjects. Furthermore there were some instances where the prisoner had not been released long enough to give a 12 month recidivism measure.

c) Female participants. Two things precipitated this omission, one being that most of the women who had completed the expedition fell into the previous category and second it was hard to locate adequate numbers for

matched selection because statistically they are a very small proportion of overall offenders.

Of the initial list of 65 that had participated in the programme during 1989 and 1990 the following were rejected - 14 females of which 10 were inmates serving sentences ranging from 9 months to 6 yrs, 3 on supervision and 1 serving a community care sentence; 12 male inmates with sentences between 18 months and 6 yrs; 1 male who had a criminal record but was not serving a sentence at the time of the programme.

The final population in our experimental sample included 40 males between 17 and 46 years old with an average age of 23. Eight members of this group had sentences of imprisonment no more than 12 months long, twenty eight supervision sentences with periodic detention, three were under community care and 1 correctional training. Type and severity of offence varied though the majority were convicted for property crimes.

Subject and matched control group characteristics are detailed in Appendix 2. The two groups were closely correlated on the first three matching variables of age, age of first offence and number of prior court appearances and have similar population distributions on type of offence, prior imprisonment and ethnicity.

Dependent measures

Once the control group had been established the reoffending rates for both groups were included in the data base. Recidivism was determined by the number of court appearances for an individual 12 months after participation in the programme. In the case of control subjects this 12 months was taken from an equivalent time on probation as the person with whom they were being matched. For example if an experimental subject completed the course 4 months into their probation sentence their equivalent match was measured by the 4 months from the time of their

sentencing. In 15 cases where the exact date of participation in the programme was not known the time point was measured from 6 months into their sentence and once again an equivalent time span taken for controls. The number of offences were also coded. This was defined by the number of charges listed under each court appearance during the same period. From this information it is possible to gauge absolute reoffending rates as well as obtain a more subtle reoffending measure of frequency.

By rating subsequent reoffending very broadly in terms of imprisonment, a community based sentence or a fine, individuals were coded on sentence seriousness. A score of two was the highest rating (imprisonment) and a fine less than $300 was rated zero. The rest were categorised as ones. The number of court appearances and number of offences were further calculated for the six and twelve months preceding the intervention and six months following it. This allowed for a pre and post intervention measure concordant with the previous evaluations' recidivism criteria. The measures of recidivism outlined in the hypotheses are summarised once again as follows:

a) Reoffending rate Whether an individual was charged with any offence over the stipulated period giving a gross measure of reoffending.

b) Frequency For those that had reoffended, total number of court appearances as well as the number of offences for which they had been charged, thus allowing a measure of frequency of further offences committed.

c) Severity Combining seriousness of offence and frequency of offending is used as a measure of severity, whereby the type of sentence is given a numerical value from two down to zero and added with the number of court appearances.

d)Temporal comparison. (a) Average rates of reoffending 6 and 12 months prior to the intervention are compared with reoffending rates for the follow-up period. (b)Individual rates of reoffending 6 and 12 months prior to the intervention are compared with reoffending rates for the follow-up period giving a categorical rating of improvement, no change or deterioration.

4.2.3. Results

Data are presented primarily in the form of numerical tables; stating number of offenders found within a given category followed by a percentage. Where statistical inferences are applicable paired t tests were used to ascertain significant differences on individual scores. For each variable phi co-efficient were calculated to measure the degree of association between categorised groups.

Reoffending rates

A comparison of reoffending rates over a 12 month period as measured by official criminal records indicated no treatment effects on this variable. When categorising dichotomously into recidivism vs non recidivism we found 65.5% (n=25) of those participating in the programme committed further offences and a slightly greater but similar 67.5% (n=27) recidivated in the control group. These rates are markedly higher than those in previous studies (Kelly & Baer 1968; William & Chun 1973; Bauer 1982; Winterdyk and Roesch 1982) and contradict other favourable outcomes which reported recidivism between 20-30% for experimental groups and 20-50% for controls.

Frequency

(a) Court appearances

The following table shows the population distribution of further court appearances following the intervention.

Table 1

Number of court appearances 12 months after the intervention for experimental and matched control groups.

	Experimental		Control	
C.A	*N*	%	*N*	%
0	15	37.5	13	32.5
1	11	27.5	8	20
2	10	25	12	30
3 <	4	10	7	17.5
	n=40	100%	n=40	100%

The dfferent percentages for the 2 groups are clearly displayed by the use of pie charts (fig 1 and fig 2).

Figure 1: Frequency of reoffending by court appearances: Experimental

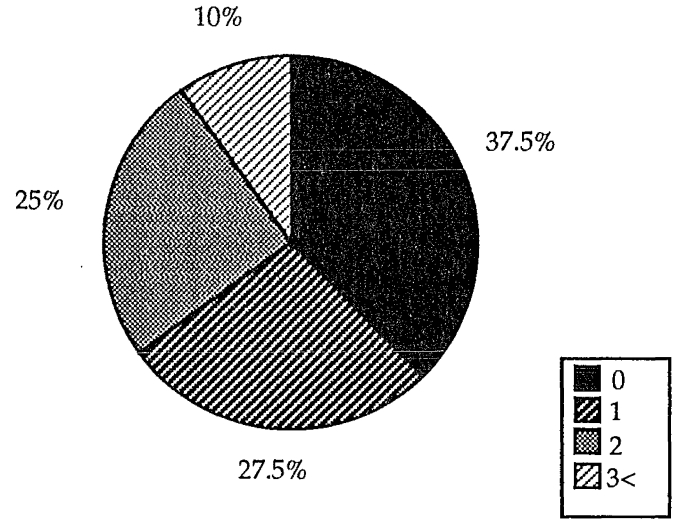
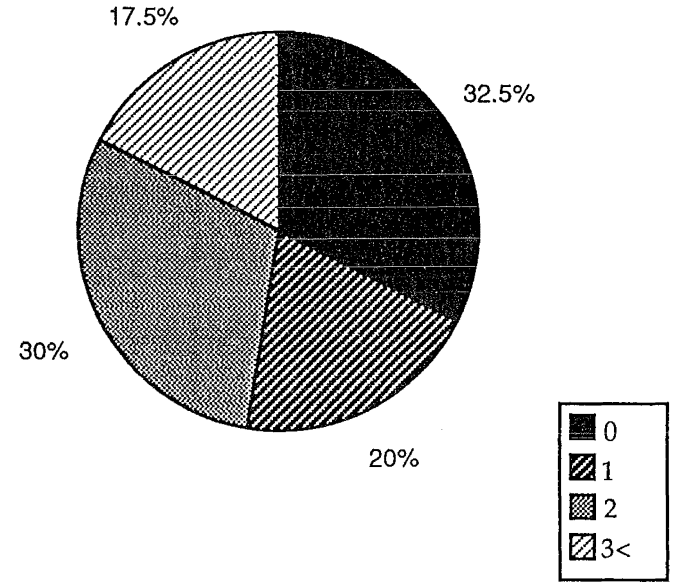


Figure 2: Frequency of reoffending by court appearances: Control



As we can see from the descriptive data, the group who participated in the outdoor programme appeared before the courts less often than the control group. Forty seven percent of the control sample had more than one appearance over 12 months, whereas this occurred in only thirty five percent of the experimental group. Furthermore no individual in the

experimental group had more than 3 court appearances in total. In comparison, 6 members of the control appeared four or more times.

The trend seen in this data indicates that the programme may be effective in reducing the frequency of reoffending, at least in terms of the number of subsequent rearrests. To test for this, data were collapsed into two groups summing numbers in the 0 & 1 court appearance category and those in the higher offending bracket.

A 2 x 2 phi co-efficient analysis did not however find the groups to be independent (phi=.105). Similar non-significant results were found for inidividual data ratings whereby a paired t test was used to measure equality of means (t=-1.7189, p=.093). Therefore whilst the data show that the control group had more court appearances overall (n=63 cf n=43) as well as a larger proportion with more than one, the effect is not great enough to give a positive statistical outcome.

(b) Number of offences.

Table 2.

Number of offenses 12 months after the intervention for experimental and matched control groups.

	Experimental		Control	
Offense	*N*	%	*N*	%
0	15	37.5	13	32.5
1	9	22.5	3	7.5
2	4	10	10	2.5
3-4	6	15	7	17.5
5-6	5	12.5	3	7.5
7<	1	2.5	4	10
	n=40	100%	n=40	100%

A similar trend is seen for number of offences as found with court appearances though perhaps more pronounced. Those offending more than twice make up 60% of the control population as compared to 40% of the experimental group. Total number of offences were n=98 and n=69 respectively.

Figure 3: Frequency of reoffending by number of court appearnces: Experimental

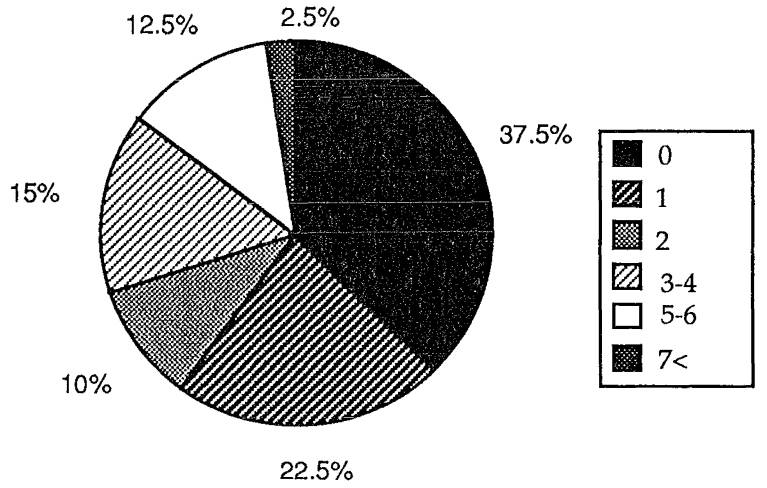
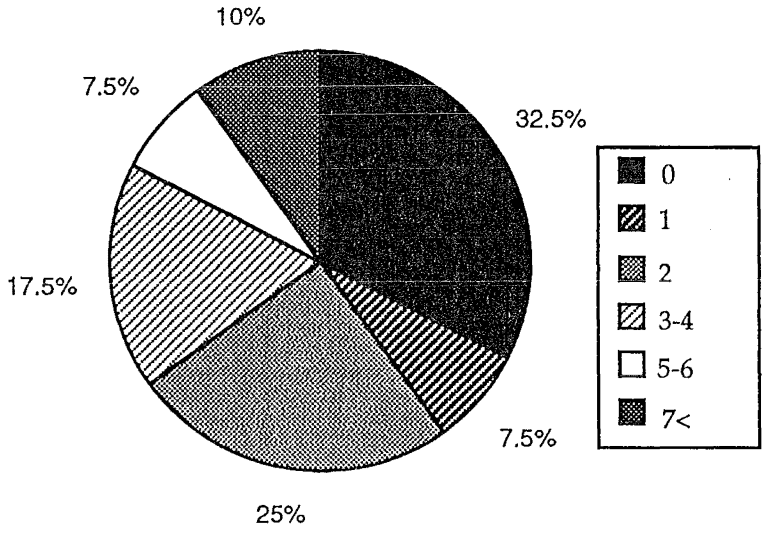


Figure 4: Frequency of reoffending by number of court appearances: Control



This pattern is still not strong enough to create significant statistical differences. A phi analysis showed groups did not differ significantly when subgrouped into 0&1 or 2+ categories (phi=.1048) and there was no significant difference between group means (t =-.367; p.1771).

Severity

A measure of severity of offence was calculated by rating seriousness of sentence where imprisonment was scored (2), supervision or periodic detention (1), a fine (0) and adding these to the number of court appearances. The poulation distributions on sentence seriousness were found to be relatively similar, although the control group had slightly higher numbers with both subsequent imprisonment or further communtiy sentences (see Appendix 3a, table 6). The combined effect of colating the two variables of sentence type and number of court appearances gives clearer differences. The experimental group had a total score of 66 and an average of 1.65 on this factor whilst the controls combined score was 91 averaging 2.2. The frequency distribution of this data is illustated below.

Table 3

Population distribution of the sample according to severity of subsequent offenses

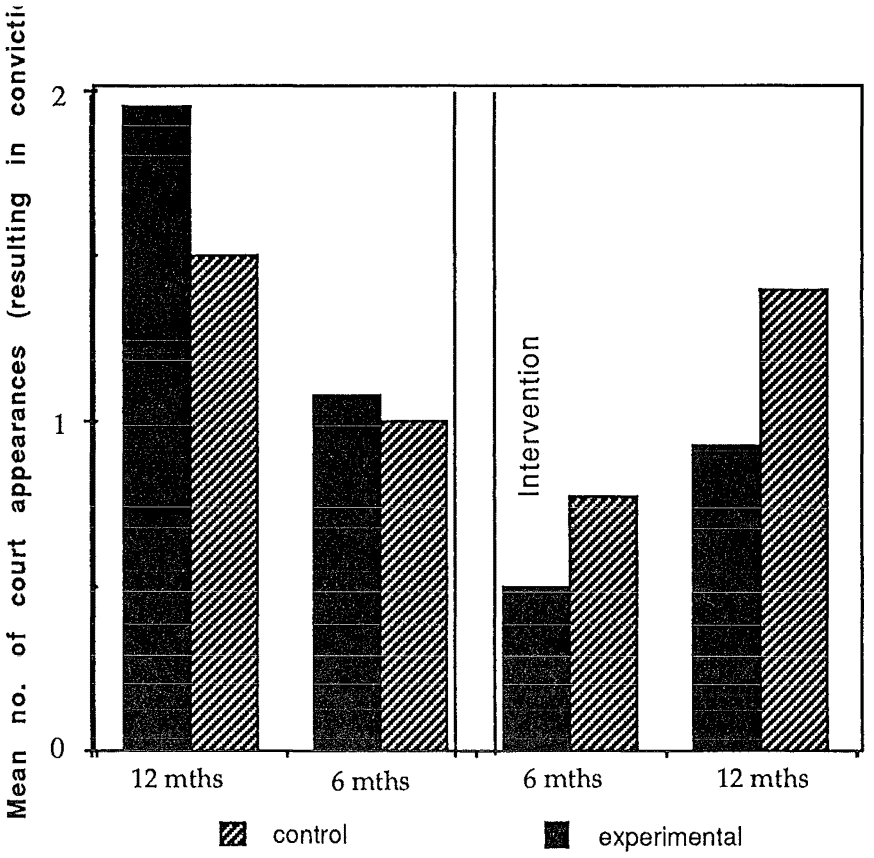
	Experimental		Control	
Severity	*N*	%	*N*	%
0-1	21	52.5	17	42.5
2-3	5	12.5	13	32.5
4-6	13	32.5	6	15
7<	1	2.5	4	10
	n=40	**100%**	**n=40**	**100%**

The data was tested for differences between groups to check whether the variation was statistically significant. Using a paired t test a further insignificant outcome was obtained (t= -1.4822; p= .14).

Temporal Comparison

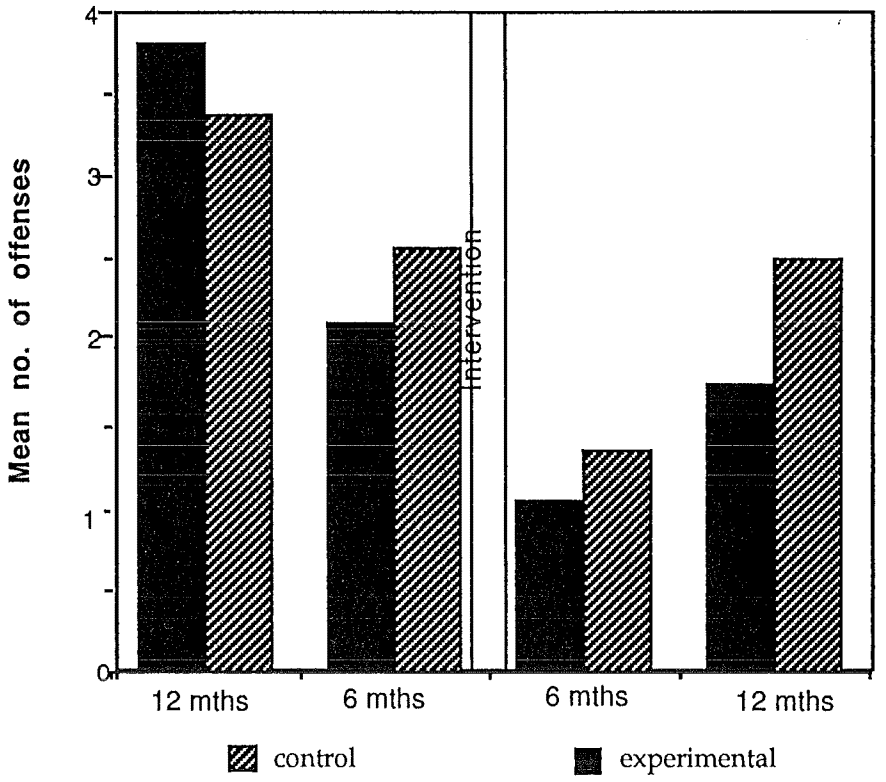
(a)Average change over time. Data summarised by offence rates and number of court appearances into two six month periods preceding and following the expedition are represented graphically in figures 5 and 6.

Figure 5: Comparison of court appearances 12 and 6 months before and after the intervention



A comparison of court apperances over the 12 months before the intervention and 12 months after it, found a significant decrease This result was apparent only in the experimental group (t=4.0623; p=.002) and not in the control (t= -1.718; p=.09).

Figure 6: Comparison of rate of offenses 12 and 6 months before and after participation in the intervention programme



On the number of offences we also find a significant decrease for our experiemental group (t = -4.009,p<.001). Whilst the control group shows a decline in the follow up period as well, this is not as marked and is not statistically significant (t = -1.68,p=.09).

As shown by the graph, the two groups had different mean rates of offending prior to the intervention period. A between group comparison showed statistical differences on these initial offending rates (see Tables 7-10 Appendix 3). The difference between the two groups on prior offending rates accounts for the discrepancy of a statistically significant outcome on this measure whilst there was none found on the previous post intervrention group comparisons. Our outcome on this dependant variable initially appears consistent with Campbel et al's (1982) reported

results in the previous evaluation (although inferential statistics on this value were not actually given). However, by measuring improvement on an individual basis, using the same criteria as Campbell et al (1982) a difference between the two populations was not so apparent.

(b)Individual Improvement. Table 4 shows the percentages for the two groups, on whether the number of offences decreased or increased for individuals following the intervention period.

Table 4

Percentage of improvement or no improvement in reoffending rates as measured by the number of court appearances 12 months preceding and following the intervention.

	Experimental	Control
Improvement	60%	50%
Deterioration	15%	30%

Comparing our percentage of improvement with Campbells which found 87% improvement for the experimental group and 32% improvement for controls it is clear our data does not find the same magnitude of effects. A measure of difference between proportions, suitable when data is discrete, found no statistically significant difference between the two populations either on improvement or deterioration.

4.2.4. Discussion

Using a number of measures to determine recidivism only the pre and post intervention measure showed significant results. This finding tells us the intervention group offended less after they had completed an expedition than they did before it. On all other measures findings were insignificant. Thus, three out of the four hypotheses predicting positive change on future crime are rejected.

The different outcomes for the recidivism criteria reinforce the advantage of multiple measures. Where a trend was seen in measures of frequency, this was not strong enough to reach a significant result; yet measuring average change over time did show differences between groups. Although matched closely on variables known to relate to reoffending (which included similar overall rates of conviction) the two groups revealed different rates of reoffending immediately prior to the time of the intervention[7]

The combination of a slight difference in post intervention frequency of offending and the difference between groups on initial rates of offending was strong enough to give statistical effects for the pre and post intervention measures. Although a statistically significant result was given from a paired *t* test which takes into account the magnitude and direction of the individual matched scores, the same effects were not present in a dichotomous rating of improvement. Once again however there was a trend which favoured greater changes in the experimental group. Overall the findings indicate the programme has a modest but insubstantial effect on reducing subsequent crime.

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[7]Research on criminal prediction has not isolated this factor as an indicator of future criminal acts but it should be recognised that due to this varience, the two groups are not entirely equivalent

Despite these moderate effects the results are not consistent with findings from the previous evaluation study which showed substantial improvement in those which had completed a programme but not those in a matched comparison group who hadn't. This inconsistency may be due to deficiencies of the previous design or perhaps population characteristics were different in this study therefore different results were obtained. The small sample used in the Campbell's et al evaluation limits population generalisability. Consequently it is possible their significant findings were incidental to the sample measured. Alternatively the use of Probation officers to select the control group may have biased the matching procedure. One other factor which previous research has not yet clarified is the effect of age. Campbell's sample was younger on average than the sample in this study ($\bar{x}$=18 yrs vs. $\bar{x}$=24 yrs). Other programmes showing successful outcomes have targeted youths (Kelly &Bear 1968; William & Chun 1973). Intended as a formative experiences, it is possible a wilderness programme may be a more successful means for changing younger peoples criminal patterns.

It is interesting to note that reoffending rates of both the experimental and control groups in this study were higher (60-70%) than those cited in other studies (20-50 %),(Kelly &Bear; William & Chun 1973; Bauer 1982). This raises the question whether group characteristics differed in some way so as to effect levels of post intervention reoffending. Research on recidivism prediction has found that offenders with a large number of prior convictions are more likely to reoffend again. Similarly those convicted at a younger age form higher percentages of reoffenders. The sample description for this study (appendix 2) showed our population was consistent with high risk characteristics. The majority of offenders had been arrested before 18 years and had more than three court appearances. Most fall within the 17-20 yr age bracket which is also positively associated

with recidivism. The possibility that high risk offenders are less effected by this type of reform programme is feasible. Where criminal patterns of behaviour are well ingrained a more intensive type of intervention, one that targets criminal cognitions and behaviour directly, may be needed.

The pattern in the findings is similar to the findings from Winterdyk and Reosch's evaluation. Here the results showed equal rates of reoffending for both experimental and control groups measured dichotomously and non significant indications of reduced frequency and severity. Despite the fact that the study evaluated a different programme with a different population age the similarity of the results for these particular measures is of interest (and may be of consequence/importance) since it is the only study known to have employed truly randomised design ie it is the most methodologically sound piece of research available.

Limitations

A number of methodology issues may limit the conclusions which can be drawn from experimental studies of this type. The problem of voluntariness is something that has been repeatedly pointed out as a difficulty with rehabilitation research that doesn't randomly assign groups. Where control groups are matched or non-equivalent, motivational factors may influence differences in outcome. An individual's willingness to be involved in a programme may imply a predisposition toward making non-criminal change. This is a factor which should be considered in our results. However, counterbalancing this effect is the encouragement from probation officers needed to get enough referrals and interest in courses. Often participant's attendance required a good deal of persuasion sometimes as far as organising them and picking them up just before departure.

When participants are tested for offending rates before and after the experience of an intervention the measure may suffer from the problem of regression to the mean. This relates to the fact that offenders are often involved in an intervention or in this case under supervision because of a high rate of reoffending in the first place and over time they will fall back to normal levels. Although our results showed our control group's offending rates dropped only slightly, indicating the intervention was responsible for changes seen in the experimental group, it is important to note that the experimental group's offending rate prior to the intervention were higher. It is then possible that both groups dropped to more normal levels, but the effect was more marked for our experimental group since initial levels were higher. Our results from this particular measure should then be interpreted with caution. If the significant differences are in part due to this regression effect, it might explain the mixed outcomes in the results.

Another factor which should be considered is the assumption that nothing of importance happens to the control group in the intervening period. Firstly all of the control group were under supervision or parole guidance which in itself is a service set up to deter further crime. How effective it is in actually doing this is not yet clearly established. A number of studies reviewed by McLaren (1992) suggests that parole and probation on its own has the potential to reduce subsequent reoffending, Hawkins and Alpert (1989) conclude that it is not an effective form of intervention. Since each of these reviews stem only from overseas research it is difficult to form any definite verdicts on this. Either way though there is the added factor that other specialised treatment interventions are offered within this service and it is quite possible a number of individuals may have been involved in these. It would therefore be fair to assume that the overall effects of this treatment intervention could appear less substantial when

comparing participants with a control group that has also experienced rehabilitative treatment.

When interperting results one needs to be cautious of extraneous factors which may effect the given outcome, especially if decisions on programme viability are to be made on the basis of this research The consistency between the findings here and the degree of consonance found with the effectiveness principles outlined in meta-analytic reviews, does however substantiate the marginal effects shown. Applying the effectiveness principles to the programmes content a number of them appeared to be relevant (though the evidence for how well the intervention achieved them was in some cases weak). Shortcomings of the programme appeared to be the intervention types theoretical focus on improving self-esteem, the possibility the programme may enhance negative peer group bonds and the apparent lack of adherence to the need and responsivity principles. Moreover the programme is only loosely based on social learning theory and does not directly target criminal cognitions and behaviour, both of which are consistently found to be the most successful methods of preventing subseqeunt crime. Although no programme would be expected to contain all effective components identified, there was no strong indication that this outdoor pusuits programme is a robust method of achieving crime reduction. The modest correlation to effectiveness principles corresponded with the partially effective outcome, that is some reductions in severity were seen which were not statistically significant and there was a disproportionate impact on whether subjects reoffended.

4.3. Psychological Measures

The purpose of this further study was to measure factors pertinent to other aims of the programme. Rehabilitation objectives although primarily aim to reduce crime, also include humanitarian goals. This requires equipping the individual with life skills and improving personal adjustment (Gendreau and Ross 1986; Constatine 1992). The previous evaluation of the programme (Campbell, Riley and Easthope 1982) gives no information on the process of change or benefits it may have for the individual. Assessing intermediate variables is important for determining additional qualities of the intervention.

4.3.1. Selection of Dependent Measures

The selection of dependent measures for this study was based on the programme's aims and similar measures used in other evaluation studies. They are also pertinent to the psychological change process outlined. Here, the components of the programme most efficacious for promoting personal change were suggested as the success experience and the essence of nature. These elements may correspond to a number of benefits but the most relevant would be improved self confidence from succeeding, and a state of well-being from the setting.

Using standard measurement devices was required for measurement validity. Validating a measurement construct requires time and testing procedures with an adequate sample size and this process was impractical within this study. Two inventories developed to measure global levels of well-being (Kamman and Flett 1986) and general self-efficacy (Sherer and Maddux 1982) were chosen as appropriate for this part of the assessment. Both inventories are suitable for adult populations.

Using existing inventories does not fully cover the objectives & needs of the programme assessment. For a fuller understanding of the process of change and what the course may offer, a final course evaluation questionnaire was compiled and included in the post intervention testing. Consisting of a number of short statements relating to the expressed objectives of this and other programmes the purpose was to explore other self-reported benefits and provide feedback for course organisers.

Affectometer 2

The Affectometer 2 (Kamman and Flett 1986) (Appendix 4a) is a self report inventory designed to measure current levels of well-being. This inventory was preferred because it was developed within New Zealand and tested on a New Zealand population sample which has the advantage of avoiding cultural bias (especially in relation to differences in language use). The scale consists of 20 short sentences half of which are positively and half of which are negatively weighted and has a five step likert rating scale. This is a shortened version of a larger 40 item scale. The 20 items are subdivided into 10 mnemonic sub-components used as guideline concepts which form the general construct. These are listed as confluence, optimism, self-esteem, self-efficacy, social support, social interest, freedom, energy and thought clarity. The subject is asked to reply in terms of a one week time period. The test is designed to be somewhat in between a state and trait measure. Using a time set of feelings over the past week means it is not based on immediate mood but will also be sensitive to mood changes over time. The test has been validated on two sample groups (n=112) and (n=78) and has demonstrated good reliability and validity. Unfortunately there are no norms for a criminal population. The inventory has the advantage of being easy to administer with a straight forward scoring method.

Self-efficacy scale

The second self-report instrument is a self-efficacy scale which gauges generalised expectancies of success (Appendix 4b). Self-efficacy has primarily been conceptualised as a situation specific belief (Bandura 1977). Only more recently has it been expanded to include a global definition. The assumption is that an individual's past experience with success or failure in a variety of situations creates general expectations of success which the individual carries over to new areas. Sherer and Maddux's (1982) scale consists of two items focusing on the willingness to initiate behaviour, the willingness to expend effort completing behaviour and persistence in the face of adversity. It contains two subscales of general self-efficacy and social self-efficacy with each item rated on a 5 point Likert scale. Seven further filler items are included in the scale but were removed from our questionnaire since they are unrelated, thus making it simpler and quicker to administer. The scale has shown construct validity through comparing it with other psychological measures and criterion validity by positive correlations with vocational, educational and military success (n=376) (Sherer and Maddux 1982). Scores on the subscales have also been shown to correlate with those on the MMPI subscales, the Rathmus Assertiveness schedule and the BEM sex role inventory, indicating it is a valid measure of personal ability to initiate and persist in behaviour and also associated with enhanced personal adjustment (n=101) (Sherer and Adams 1983).

Course evaluation questionnaire

To attain a measure which related specifically to the outdoor experience a twenty item questionnaire was constructed. This was tailored to meet the twin aims of providing feedback for course organisers and exploring other subjective benefits. Items included short statements and respondents were asked to rate these on a scale of 1 to 5 (Appendix 4c). The choice of statements was based on what expedition organisers thought were

the most important elements and was drawn from literature on recreation and the outdoors (Beard and Ragheb 1980, Ellis and Witt 1985). Areas covered were such things as increased feelings of confidence, positive interpersonal interaction, learning new skills, problem solving, a sense of achievement, enjoyment of nature and finally attitudes toward the probation department and further reoffending. Respondents were also asked to comment on any other aspects they felt were beneficial or unpleasant.

4.3.2. Method

Subjects

The subjects were 12 adjudicated males who completed the Christchurch Community Correction Department's outdoor expedition program during 1991-92. Selection was determined by two factors: 1) a referral to the program by the individual's probation officer, either as a result of special conditions stipulated by the court via their officers' recommendation or because of an interest expressed by the individual and 2) voluntary involvement in the programme's evaluation component. Each participant was selected for the programme if it was believed the course could be of benefit to that individual. Selection criteria were not restrictive; course organisers typically encourage as many as possible to be involved. Referrals tended to be weighted in favour of those under the guidance of a probation officer directly involved with the outdoor program. The individuals were aged between 18 and 40 years old with an average age of 24. Nine were on supervision sentences whilst three were serving short sentences at Rolleston prison.

Procedure

Permission was granted by the Justice Department to interview clients participating in the expeditions. The purpose of the study was explained to all probation officers at a meeting and a letter was given to

each officer who had referred a client outlining the requirements of their involvement and that of their clients (see Appendix 5a). Since pre expedition interviews with individual subjects proved impractical[8], the two pre-test self report measures were completed by participants under the guidance of probation officers. A written consent form for clients was included with the measures (Appendix 5b).

Many more participants completed the pretest forms than were involved in the post expedition evaluation. Initially it was planned that the follow up could take place in conjunction with the participant reporting to probation. It turned out however that this reporting system is quite flexible and clients may or may not turn up at an approximate expected time. Organising interview times and getting subjects to keep these appointments proved extremely problematic and more than a little frustrating. Consequently only 12 of the initial 30 who filled out the first of forms completed the secondary post test questionnaire.[9]

The secondary data collection was conducted up to three weeks after each expedition. This required filling out the A2 and self-efficacy self report inventories again as a comparison and completing the course evaluation questionnaire. The time between finishing the course and gathering post test data was varied slightly across individuals due to the method of data collection and the practical limitations imposed by this. Three of the participants were interviewed in the week immediately following the expedition, six in the second week and three during the third. If contact

[8]Organising specific times for interviewing those clients reffered to the programme proved unsuccesful. Offenders report into their probationofficers at approximate times and it was not suitable to conduct seperate interviews during the pre expedition afternoon orientaion session.

[9]One solution to the problem could have been to ask probation staff to administer these. This possibility was considered but rejected for reasons of confidentiality which is particuarly important for the course evaluation.

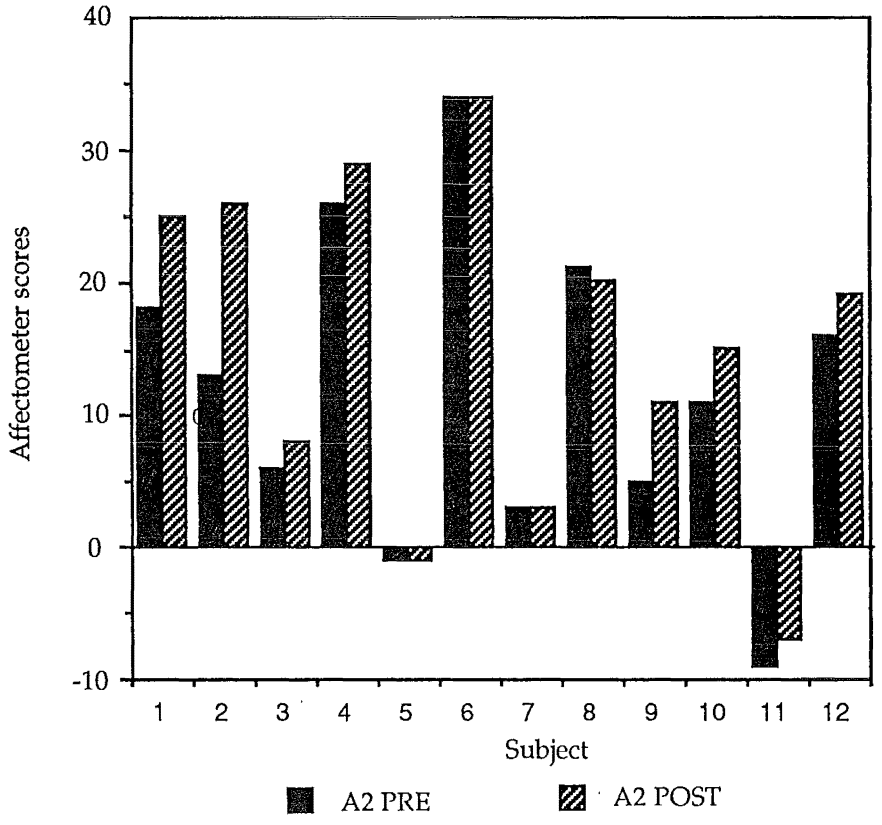
with participants could not be made after three weeks they were excluded from the sample.

4.3.3. Results

Affectometer 2

The mean score for the 12 subjects before the intervention was $\bar{x}$=11.9167 with a standard deviation of 12. Individual scores ranged widely from -9 and 34 After the intervention the mean score increased to 15.1167 with a similar standard deviation and range of s=12.67, range = -7 to 34. A graph of the individual scores for subjects (Appendix 6a) is given in figure 7.

Figure 7: Bar graph of individual scores pre and post expedition for Affectometer 2



A paired test used to assess the differences between the two measures before and after intervention gave a *t* value of -2.8617 which is

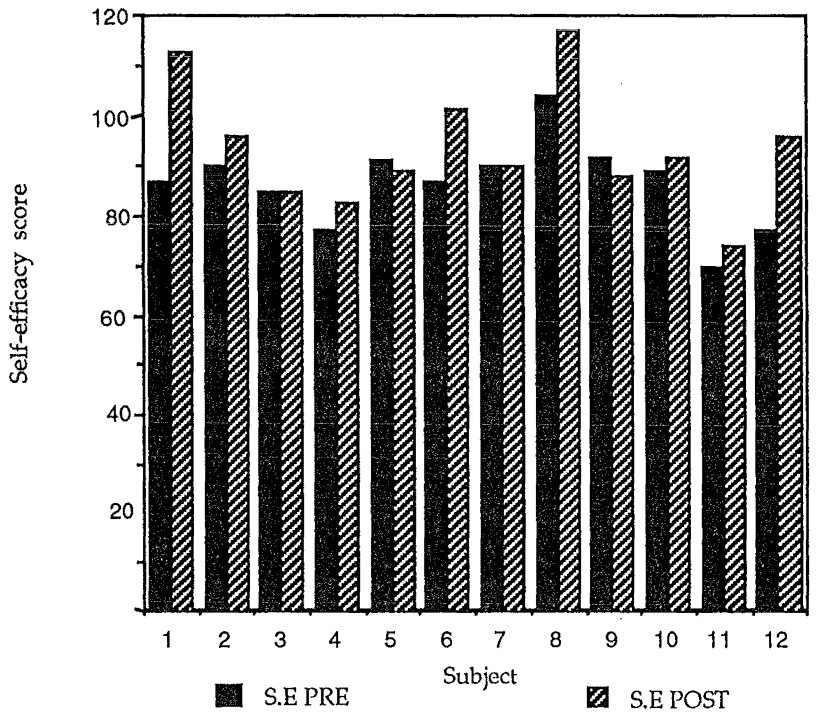
statistically significant with probability of .01. This implies that the treatment programme is effective for improving overall levels of well-being as measured by this inventory.

The relatedness of the pre and post test data is indicated by a correlation co-efficient (Pearsons R) which tells us whether the scores for the sets of measures are consistent. The data for the affectometer 2 had a R-squared score of .9037 showing a strong positive linear relationship between the two samples

Self-efficacy

Mean scores on the self- efficacy inventory were 86.58 (range between 70 and 104; std = 8.75) before the intervention increasing to 93.66, (ranging between 74 and 117, std 12.16) after the intervention. Individual scores (Appendix 6b) are represented graphically in the figure below.

Figure 8: Bar graph of individual scores on self-efficacy before and after intervention



A paired *t* test for the self-efficacy self report measure also gave statistically significant results with a *t* value of -2. 6876; p=02. A measure of the relatedness for this second set of self report data showed the strength of the association was not as great for the self-efficacy scale although still positively correlated with an R-squared co-efficient of .441. This correlation statistic indicates that whilst there was an overall increase on this measure there was some variation on the consistency of the improvement for pre and post test scores. As is shown in figure 8 there were two cases (subject no 5 and subject 9) where self-efficacy scores decreased after the intervention and another two where no improvement was shown.

Evaluation questionnaire

For this inventory it was not appropriate to conduct any statistical analysis of finding. Therefore a descriptive summary of mean ratings for each item is given (see Appendix 5c). Average scores ranged between 3.5 and 4.8 on a 1-5 likert scale with 5 as the highest score. Data is highly skewed with a small spread favouring high ratings for each item. Since the items are positively weighted this shows an overall favourable impression of the programme.

It is difficult to separate the single most important factors when scores are grouped together and such a small sample was used. Nevertheless some interesting patterns can be observed. The items that received the highest score were: 'It gave me a sense of achievement', 'It was good to have succeeded in something that was a result of my own hard work'. Both score an average of 4.75. Four items with average scores of 4.65 were: 'It was a good opportunity to take time out to think more clearly', 'It felt good to be amongst nature', 'I enjoyed the physical beauty of the outdoors', 'It felt good to see the results of my efforts'. There is a notable

consistency shown in the scores in that items related to a sense of achievement or nature itself, were rated most highly.

'I am more likely to try new outdoor leisure activities' obtained the next highest rating with a score of 4.5. Then, 'The experience has made me feel more positive toward the probation department and what they are doing' received an average rating of 4.41. Aside from one item, the rest of the items were grouped closely together scoring between 4.25 and 3.75. 'It gave me a chance to share my ideas and feelings with others' was rated as least important receiving a low score of 3.5.

4.3.4. Discussion

Hypothesis 3, stating there would be a significant improvement in well-being, self-efficacy and that the comments from participants following the expedition would be favourable, is supported for each measure. A distinct statistical difference is seen in the results for the Affectometer 2. A similar outcome occurs in the measure of self-efficacy although the effect is not as strong. The general questionnaire also gives an overall positive impression of the expedition.

Self reported well-being indicates an improved perceived quality of life following the expedition. This improved positive state of mind is likely to carry over to social and personal realms and thus benefit an individual's adjustment. It is proposed that this improved mood state stems from the beauty of the natural setting and a feeling of purpose and connection within it.

The concept of general self-efficacy derives from an integration of all successes and failures. A task successfully performed or a challenge met serves to increase this global trait, giving a person a more confident orientation toward life and increased perseverance in future challenging

situations (Shelton 1990). It appears the outdoor wilderness programme, through offering an opportunity to succeed, ameliorates this feeling of self-efficacy; in turn we would expect a person to be better equipped to face new fears and challenges.

The additional questionnaire further supports both feelings of success from having completed the expedition and the enjoyment of nature as primary factors important to the experience. These results are consistent with those components integral to the wilderness programme which were proposed as influential in accomplishing change (chapt 2.4). Willingness to try new leisure pursuits and a more positive attitude toward the community corrections department are also rated highly, suggesting that the programme succeeds in meeting these two objectives. The item 'taking time out to think more clearly' concords with the programme's ability to facilitate improved problem solving, which was one of the principles outlined in the list of effective intervention qualities (Chapt 4.1).

The item with the lowest score referred to group identification processes ('It gave me a chance to share my ideas and feelings with others'). Since the discussion on effective rehabilitation principles suggested that group cohesiveness is not a useful treatment target for crime reduction, it may be an advantage that this factor has less relevance. Attitude toward reoffending also scored comparatively lower than the rest of the items. A few of the participants commented that although they now felt they would have no further involvement in criminal activity this change was not prompted by the outdoor experience.

Because each item was rated highly by most individuals and items referred to positive components, the programme appears effective in offering a number of self-perceived personal gains From the individual

interviews the impression was gained that the programme was considered worthwhile and a challenging and satisfying experience.

Limitations

The findings in this type of study have obvious shortcomings. Using a pre and post intervention evaluation without employing a control group has problems with establishing causality. Within a prospective design it is assumed that the change in the dependant variable is due to the experimental intervention not some other contributing factor. Without a control group however this is difficult to determine unequivocally. A pre and post type of measurement is not an ideal method of experimental evaluation, though the most viable if, as in this circumstance, it is not possible to randomly assign groups and the dependant variable is too elusive to establish a valid matched control group.

Other outcome uncertainties exist. Because of the ethical issues involved in conducting research, the subjects exercised the choice of participating in the evaluation component of the programme. The voluntary nature of the study is problematic for gathering a representative sample of participants. For example those who were not interested in filling out the subsequent forms may perhaps have been less enthusiastic about the programme and therefore were less motivated to participate in the secondary evaluation. It is possible that not all course participants experienced the same benefits as the self selected sample which could lead to biased results. This limitation is compounded by the problem of a small sample perhaps atypical of a wider population.

It is important to acknowledge the possibility of sample expectancy effects in self report evaluations. Subjects may answer questionnaires according to what they think the evaluators would like to know particularly if the evaluation is taking place within an institution which has some

authority over participants. Care was taken to minimise this factor by ensuring the secondary evaluations did not involve probation staff. Participants were also assured confidentiality. While the non affiliation of the researcher may diminish these effects, it is impossible to eliminate fully this source of potential bias. In this type of design it is not difficult for participants to anticipate the research objective and subjects might have been tempted to produce answers which would show the programme in a positive light.

A further limitation on the information gained is that the data does not include a follow up testing. Subsequent measures were not carried out because of the difficulty of establishing causality over a prolonged period of time. Where there is no control group as a comparison, it is difficult to attribute any changes on these variables to the effects of the programme when there will be numerous other factors in a person's everyday life which could substantially change them. Factors such as home conflict, finding a job and failing in some other task would each influence the offenders levels of positivity and self confidence. Measuring changes over a longer period would inevitably be confounded by such factors. Consequently, whilst it is shown that the programme can effect levels well-being and self-efficacy in the short term, it is not known whether or not these improvements are maintained.

The significant outcome deriving from the self report inventories in this study suggest that the programme succeeds in achieving positive psychological change. On the whole it seems to be fairly well established that wilderness progammes can provide some form of postive personal benefit. This phenomena has been documented in qualitative studies and as the literature review showed, the majority of evaluation studies measuring intermediate factors (usually self concept) claimed short term changes could be achieved. The findings from this study are consistent

with these previous evaluations but direct analogies can not be drawn since the inventories used cover slightly different psychological constructs. Similar to this study the majority of these were pre and post intervention designs (Cave and Rapport 1977, Kimball 1979, Davis Berman and Berman 1989, O'Brien 1991) or had non equivalent control goups (Porter 1975, Svobody 1979, Bauer 1982), unfortunately both of these measurement techniques lack experimental precision. Further research with randomly assigned groups would be helpful for establishing more experimentally valid conclusions. A random experimental design would remove the problem of causal uncertainty and allow for meaningful long term follow-up measures.

5. GENERAL DISCUSSION

Over the course of this investigation three allied but distinct perspective's were sought to develop an understanding of the effectiveness of the programme. The first of these derived from the broader field of treatment effectiveness whereby a number of principles have been outlined which correspond to known treatment success. The primary objective of this theoretical discussion was to integrate the literature on wilderness programmes which have typically been viewed in isolation of the wider field. The components which contribute to successful programmes offer some insight into the little known linkage between programmes and may be useful when planning future intervention goals. Our second section used a matched quasi experimental design to give an experimental measure of the programmes effect on crime rate. Since the scant evidence available suggested that effectiveness on this factor is not uniform across programmes and has limited generalisability due to variation in the independent variables, programmes require their own independent evaluation. Thirdly, a separate study measured success pertaining to psychological change. This study was a means of assessing alternative programme qualities and exploring the process of effects. Together the three studies provide a multilevel form of assessment. The first relates the programme to broader rehabilitation findings, the second assesses the primary rehabilitation goal of reduced recidivism and the third concords with secondary rehabilitation aims. Determining outcome in a number of ways gives a more detailed understanding of effectiveness.

Overall the experimental results suggest that the intervention is primarily successful in aiding individual adjustment. Its effects on recidivism appear to be small. The outcome on recidivism differed according to how reoffending was defined. The programme had no effect

on whether or not the person returned to crime (group averages on this measure were almost identical) but it did appear to make a difference to how often they reoffended. A significant effect was gained by comparing group averages on reoffending to previous offending rates measured by both court appearances and number of offences for which they were charged. The two other measures on frequency of subsequent crime were however non significant. These apparent inconsistencies highlight the problem of definition variance and illustrates the limitations of basing effectiveness on a single criteria measure. Together the differing results on this variable would imply that involvement in an outdoor expedition encourages some reductions in crime but the magnitude of this effect is not large.

From the findings in the second experimental study it seems the programme succeeds in meeting the Justice department objectives of providing an experience which has positive psychological benefits. Both the self-efficacy and well-being self report inventories showed significantly positive outcomes and the general course evaluation questionnaire indicated the programme contained a number of positive benefits. Participants stated the course had improved their attitude toward the probation service, gave them a sense of achievement, an appreciation of nature and overall the experience was felt to be positive and worthwhile.

It is difficult to draw causal conclusions on results from the two separate experimental studies. One might speculate that well-being and self-efficacy are not effectual intermediary components because the programme appears to effectively target these factors but is not able to effect substantial criminal change. However inferences of this type can only be tentative since different population samples are being compared and study three's sample was too small to make valid wider population generalisations. Alternatively these variables may in fact be appropriate for

reducing criminality but a short term change in these is not substantial enough to influence future criminal change over 12 months. The cause and effect relationship between self perception related variables and criminal activity at this point remains vague. Research covering self esteem and criminality indicates the degree of association between the two is not yet fully understood[10] and the data here is insufficient to clarify the correlation between the similar variables measured. However a positive self attitude is important, not just for criminals but for anybodies personal adjustment and quality of life. Therefore a programme which serves to enhance these arguably has value whether or not these changes associate with crime reduction.

The evaluation of the programme in relation to the effectiveness principles found accordance with some characteristics of effective rehabilitation. The intervention provides clear rules and sanctions without interpersonal domination, while it is authoritarian, staff need to place few consequences on the individuals behaviour because real and immutable sanctions are provided by nature itself. The programme models alternative prosocial behaviour and teaches constructive use of leisure time. Improved problem solving is also suggested as a quality of the programme although this is a feature that would be facilitated indirectly, that is, problem solving skills are not actually taught but learning an ability to cope, which the outdoor experience provides, could be useful for developing problem solving skills. The programmes ability to instil prosocial and interpersonal

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[10] As previously noted some theory maintains that improving self concept (a similar construct to well-being and self-efficacy) is important for the process of altering criminal conduct (Goldsmith 1987, O'Brien 1991). On the other hand rehabilitation programme reviews suggests that programmes which focus exclusively on self-esteem elevation have typically not been successful methods of criminal reform (McLaren 1992) and other findings show criminal offenders do not exhibit lower levels of self-esteem than non criminals (Lueng & Drasgow 1986).

skills is proposed as pertinent though similarly these are speculative features. The research on effective reform programmes has shown those programmes most successful in reducing crime are ones which target criminogenic needs (factors known to associate with reductions in reoffending when altered) and are based on behavioural or cognitive behavioural principles directed at changing criminal attitudes and conduct. This outdoor intervention does not appear to include these components. Whilst the programme conforms with a number successful intervention principles it therefor fails as an ideal method of reform.

McLaren's (1992) list of effectiveness principles further suggests offenders need to be carefully selected for an intervention according to individual needs and suitability rather than the intervention being broadly applied across a general group. There may be some justification for attributing the minor effects on recidivism to the possibility that the sample did not contain enough probationers for whom the intervention is theoretically effective. If the programme is known to enhance well-being and self-efficacy then perhaps if should be directed principally toward offenders who appear unhappy and have low self confidence. Those with a negative attitude toward the Corrections department and authority in general may also benefit from the programme. There is also some suggestion from previous research that the programme may be most effective with younger age groups. A selection criteria which is sensitive to these factors may be crucial for effecting maximum change. This processes would accord more closely with the responsivity principles stated as an important variable for ascertaining programme success.

Although the programme has a number of effective reform shortcomings, one potentially valuable programme quality is that it functions within an existing counselling and guidance service. This ongoing contact provides follow up support and allows further community

and sociological needs to be meet. Engendering short term individual change can be a waste of time if factors in the environment are neglected whereby a persons home life and social networks are not supportive of non criminal activity. Research has shown that multi faceted interventions are superior to single component approaches (Minor & Preston Elrod 1990). Whilst the programme fails to address factors known to be directly linked with antisocial propensity (eg violent behaviour or drug and alcohol abuse), it may be valuable within the existing correctional service within which it is placed. This provides opportunity for individual needs to be monitored and the offender might undergo subsequent programmes targeting other crime related factors. Self-efficacy and well-being enhancement on their own may not combat propensity toward criminal activity but could make an individual more amenable to resocialisation. The programme may therefore operate as a catalyst for coping with other change requirements such as finding employment, changing violent behaviour patterns or dealing with drug and alcohol problems.

Methodological Issues

It is easy to find fault with the testing strategy used in this study and similarly other evaluation studies of its type. Many of the validity problems are inherent to the practical limitations imposed by applied research and were very difficult to avoid. With the measurement of recidivism group inequivalence due to the technique of matching and the voluntariness of programme involvement, could be confounding factors influencing outcome. Study three's self report measures are susceptible to false responding and expectancy bias, plus has the limitation of a small sample without a control group. Nor are the effectiveness principles determinate factors, only indicate features currently found associated with successful programmes, these may change as additional research qualifies

further success related components. Inferring causality is problematic, in each of the evaluation components there is at least one plausible explanation for the results other than the treatment under evaluation.

In terms of experimental rigour the study measuring recidivism provides the most valid information. A behavioural measure of official reoffending rates is less susceptible to subjective distortion and the study had a matched control group with which the effects of the intervention could be compared. The assessment of the process components of the programme (study one and study three) are important primarily for their exploratory qualities. The type of information each of these aimed to provide is more difficult to assess in quantitative terms and the methods used showed a number of methodological weaknesses. While it is possible to conjecture various explanations for the experimental research findings other than the independent variable being measured, the experimental procedures were designed to ameliorate short comings where possible and the findings give useful indications of effects even if unable to provide absolute assurances. It is however essential that limitations of results are taken into consideration if experimental studies such as this are to influence future programming and policy making decisions.

Evaluation Conclusions

A summary of our results suggest that within the methodolgical limitations outlined the intervention has some minor success is reducing the subsequent rate of crime committed and may improve psychological adjustment (as measured by the well being and self-efficacy constructs) for most individuals shortly after and expedition. These effects are found for a comparatively short programme that operates within a probation corrections service and are pertinent to male offenders with a wide age

range and various offence histories. The programme is a relative simple one and although will vary, sometimes including rafting kayaking or abseiling, predominantly involves tramping in alpine and bush wilderness regions. Overall it appears this programme is successful for what Gendreau and Ross described as the offender centred goal but has a limited impact on the primary socially centred goal of reducing crime.

Whether these programmes can be considered practically viable might be a matter of perspective. It is difficult to find fault with a programme that lasts for a week, for failing to combat the complex environmental factors that predispose a person to crime. If viewed as a change catalyst to be used in conjunction with other rehabilitation techniques however, these outdoor expeditions may be a valuable component within a wider spectrum of supportive services.

The simplicity of the wilderness experience both in concept and execution appears to be basic to its usefulness, programmes are relatively straight forward and can be run at low cost. Whilst our results show the programme is only marginally effective for reducing crime perhaps the ease with which they can be implemented out weigh any doubts on the efficacy of their effectiveness.

Broader Theoretical Implications

The experimental information presented in this study adds to the pool of research on rehabilitation through outdoor the pursuits method. Collectively a large number of these studies might provide future guidance on types of programmes which are most effective. However because the effective programme attributes are yet to be isolated and not all interventions are the same, the findings of this study allow few generalisable conclusions regarding all outdoor pursuits programmes.

While focusing on outcome components (such as recidivism and self concept) is required for assessing a particular programme its broader theoretical implications are limited.

To gauge which factors might correspond with greater rehabilitation success or how the programme facilitates change, the components of these types of rehabilitation interventions need to be better understood. Two sets of formative issues were explored in this assessment, the first discussed how the programme could facilitate psychological change and the second on how it could facilitate reduced criminal behaviour. A discussion on the psychological change process proposed that the unique combination of factors in programmes may be important. Two factors were identified which appeared to be causal components of the programmes success. Kaplan and Talbot's (1983) research gave evidence of the quality of nature itself as the primary producer of change. Theirs is the only research known to fully explore the process of the wilderness experience. McRae's (1986) research further indicates that teaching environmental awareness encourages on going participation in outdoor leisure. As both the studies drew on non-offender populations if is possible that responses may be different within offender samples but there remains the impression that the influence of the environment has been under emphasised as an explanatory process in other wilderness rehabilitation research. Secondly the challenge of the task boosts self esteem by providing a success experience and offers a socially acceptable means of risk and excitement. There is some evidence to support risk and danger as components which enhance psychological change in participants (Cave 1979). The positive results on the psychological measures give some indirect support to the proposed model of change namely feelings of harmony engender well-being and achievement is associated with improved self-efficacy, and the

additional qualitative information further attests to the importance of nature and achievement within the experience.

Providing a positive challenge coupled with teaching sensitivity and respect for the environment are suggested as appropriate programme aims. Both of these factors have been shown in previous research to contribute to programme success (Cave 1977, McRae 1986) (as measured by improved MMPI scores and subsequent outdoor activity respectively). Moreover, encouraging a sense of harmony with natural laws is consistent with a Maoritanga perspective, and also may have larger long term benefits to society in terms of the growing need for a responsibility toward maintaining natural resources.

Where these proposed psychological benefits look primarily at factors leading to changes which enhance a persons perception of self or feelings of competence, the process was viewed independently of criminal theory. Aligning this perspective and the theoretical processes discussed under the effective reform methods (which are pertinent to crime related change) poses some difficulty. The main point of inconsistency here lies with integrating the role of self-esteem. The psychological efficacy concepts outlined are not dissimilar to self-esteem improvement, which has had very little support as an effective criminal change target.

However if one considers the source on which this argument is based, we might conjecture the psychological concepts value within this programme is not fairly judged by this means. Aside from the limitations of the meta analysis method mentioned, is important to note that the principles were drawn from a collection of different types of programmes and viewed in isolation of how the programme achieves these. A programme which targets self esteem through non directional counselling for example may have very different overall psychological effects (and

subsequent impact on recidivism) than an outdoor pursuits programme. The redundancy of self esteem as a useful variable to target for change is a debateable, many would argue in favour of its value. The issue does however suggest that the inclusion of other attributes within theoretical focus of wilderness therapy is needed rather, as has been done in the past, placing importance solely on the programmes ability to improve self concept.

The assessment of the programmes relationship to rehabilitation principles provides theoretical guidanceon other possible positive features. The features of successful rehabilitation (Study 1) looked at qualities of the programme associated with crime reduction and advised such elements as problem solving, clear rules and sanctions, improved use of leisure time and prosocial modelling as features within the programme which are appropriate to emphasise. There is no known research which documents the relationship between Maoritanga identification and criminal change within Maori offenders, or how profound an effect the experience of nature and living within natural laws can have on criminal attitude change. These are aspects which need to be further investigated. Identifying with the environment and environmental issues could potentially be important educational components within programmes possibly having very positive effects.

Future Research Directions

Individual assessment of a programmes ability to alter recidivism or its effectiveness in reaching its other objectives such as altering self concept, is at this stage important for gauging feasibility. For the advancement of knowledge in the field however, outdoor programme evaluations needs methodologically sound research designs that does not evaluate the general effectiveness of programmes as has been done in the past but rather answer more specific questions eg how imp is the length of the programme, what

are the components which are most effective, are certain qualities such as environmental appreciation more successful in promoting long term benefits, are some activities more suited for some subject populations than others.

The process issues discussed raised a number of causal possibilities on how programmes are effective. It would be interesting to examine the extent of natures role as a change agent. A greater emphasis on the environment and teaching the importance of working in harmony with it might enhance positive effects of the wilderness experience. The issue of control versus self-displine is another area which might be of theoretical interest for understanding the programmes function in engendering psychological change. In light of what is known on the importance of differential selection is might also be important to assess how these suggested programmatic qualities would effect particular populations. Maybe different types of programmes are more suited to different individuals. A programme with a high risk factor could be appropriate for a particular personality type, fulfilling need for offenders who seek excitement and are attracted toward risk taking activities. Alternatively one with an environmental emphasis might work better with individuals needing a spiritual focus or sense of meaning in their lives.

The research on effective methods of reform suggests that a programmes category of type is less indicative of a programmes success than its adherence to a set of qualities. The future understanding of Outward bound type intervention's effectiveness for criminals may rest on exploring the interventions strengths in relation to these. This study outlined a number of qualities which might be looked at. Suggested measures are attitude change toward authority, improvement in problem solving, prosocial and interpersonal skills and change in leisure use, each of which appeared to be present within the intervention. A fuller understanding of

these processes within the programme could give a theoretical base which has consistency with existing knowledge on criminal reform.

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APPENDICES

Appendix 1. Principles of effective reform

(A) Effectiveness Principles Outlined by McLaren (1992)

'A review of research shows sixteen principles which have been found to underlie those interventions which are associated with reduced reoffending. These apply to many types of correctional interventions, whether they take place in the community or in residential settings. The most important of these principles is that interventions are based on a social learning model- one in which offenders are provided with opportunities to replace antisocial and criminal attitudes and behaviours with new attitudes and behaviours that are more likely to result in a law abiding life style.

Effective correctional interventions are notable for some or all of the following sixteen characteristics. These characteristics have been referred to as the principles of effectiveness. These principles are not set in stone but are open to challenge and revision as further research clarifies the conditions associated with reduced reoffending.' (McLaren 1992 p. 11)

1. Social learning model: successful interventions are often based on a social learning model. This treats criminal attitudes and behaviours as learned habits which can be changed by teaching and reinforcing new non criminal attitudes and behaviours.

2. Authority structures: authority structures with clear rules and sanctions are employed, and staff make formal legal sanctions more vivid, understandable and certain in their application. The use of authority reflects a firm but fair approach rather than interpersonal domination or abuse.

3. Modelling and reinforcement of positive alternatives: staff model and reward prosocial alternatives to criminal styles of thinking, feeling and behaving.

4. **Training in problem solving**: offenders are trained in practical and personal and social problem solving which enables them to better cope with personal and social difficulties.

5. **Community contact**: intervention staff use community resources. Positive links are established between the institution organisation and the community.

6. **Staff/offender relationships**: empathetic relations between correction staff and offenders are encouraged. These relationships are characterised by open communication and trust.

7. **Advocacy and referral**: high levels of advocacy (speaking for or on behalf of the offender) and brokerage (referring offenders to interventions and services) are encouraged. However the agency to which they are referred must be offering an appropriate intervention.

8. **Staff behaviour**: intervention staff relate to offenders in warm, flexible and enthusiastic ways. At the same time they support anticriminal attitudes and behaviours, that is, those that are supportive and positive regarding conventional attitudes toward crime.

9. **Exaddict and exoffender staff**: exoffenders and exaddicts are employed in substance abuse interventions to serve as credible role models for life style change.

10. **Offender involvement in intervention planning**: offenders are involved in intervention planning rather than having interventions imposed on them in an authoritarian manner.

11. **Strengthening of positive behaviour**: staff aim to strengthen prosocial and non criminal behaviour rather than attempting to reduce antisocial and criminal behaviours. Targeting antisocial behaviour creates a risk that those behaviours will be strengthened by both undue attention and by the expectation that they occur.

12. **Controlling offender peer groups**: staff neutralise or mobilise the offender's peer group so that offenders have less opportunity to reinforce each other's antisocial and criminal attitudes in group situations.

13. **Therapeutic integrity**: The intervention has a high level of therapeutic integrity, and is not diluted or neutralised by factors which might dilute its effectiveness. For example it has the proper resources, staff are well trained

and the theoretical knowledge associated with the intervention is clearly understood and used. Finally an adequate number of hours of intervention involvement is provided.

14. Use of a combination of intervention tools: a combination of tools is used to change criminal behaviour rather than a single intervention method relied upon.

15. Relapse prevention and self-efficacy: offenders are taught to recognise and cope with situations where there is a high risk of relapse into criminal behaviour. By gradual exposure to high risk situations, offenders build up self-efficacy or an improved perception of their personal coping abilities. Training in these skills increases the chance that positive changes will be maintained after interventions end.

16. Matching offenders with interventions: offenders are matched with interventions so that an interventions full range of resources are not automatically applied to every type of offender subgroup. Only the components which are suitable for a particular offender type are used in each case.

Risk need and responsivity

Three other principles - those of risk, need and responsivity- are also associated with intervention effectiveness.

Risk: Higher risk offenders are likely to show greater reductions in reoffending when they receive more intensive intervention and supervision, whereas low risk offenders are likely to respond best to regular levels of intervention intensity.

Need: Higher risk offenders show better responses when targets of interventions (eg. substance abuse) are those which have been shown to be associated with reductions of reoffending when altered.

Responsivity: Higher risk offenders will only be able to respond to interventions which match those offenders abilities and learning styles.

(B) Programme Characteristics Outlined by Gendreau and Andrews (1992)

'The program must target criminogenic behaviour and attitudes. The majority of programme targets must fall within the given set. Please note that if the programme targets 3 or less behaviours all must be in the set. If 4 behaviours, then 3, and if 5 of more, 80% of program targets must be within the acceptable set.' (Gendreau and Andrews 1992 p. 3)

1. Change attitudes, orientations and values favourable to law violations.
2. Change antisocial feelings
3. Improve attitudes toward authority figures.
4. Reduce antisocial peer associations.
5. Promote identification with anticriminal role models.
6. Reduce problems associated with alcohol abuse.
7. Reduce problems associated with drug abuse.
8. Reduce anger/hostility levels.
9. Promote pro-social skills.
10. Improve problem solving skills.
11. Encourage constructive use of leisure time.
12. Improve interpersonal skills.
13. Engenders self efficacy and improves assertion skills.
14. Improve academic performance.
15. Promote positive attitudes toward school/work.
16. Resolve emotional problems associated with extra-familial child abuse: a.physical abuse; b.emotional abuse; c.sexual abuse.
17. Resolve emotional problems associated with extra-familial sexual abuse.
18. Promote family affection/communication.
19. Promote family monitoring and supervision.

20. Improve family problem solving.

21. Resolve deviant arousal/ attitudes.

22. Provide low-pressure, sheltered environment for mentally disordered offenders.

23. Increase empathy for victims.

24. Relapse prevention: ensuring the client is able to recognise risky situations that lead to law breaking and has a concrete plan to deal with these situations.

Appendix 2. Sample characteristics

Experimental and Control Sample Characteristics for Matched Items Related to Recidivism.

Table 1.

Comparison of expedition population with matched control group on age.

Age in years			*R-sqrd .9925*
mean	23	23.5	
range	17.8-46	17.6-47	
Age of 1st offense			*R-sqrd .6196*
mean	17.3	16.8	
Prior court appearances			*T-sqrd .9653*
mean	7.8	7.9	

As shown by the correlational scores, the experimental and control populations were almost identical for age and number of prior court appearances (offences), the two variables for which recidivism has been most closely associated. A reasonably good correlation between groups is also found for age of first conviction. Pritchard(1979) found that arrest before age 18 was consistently related to recidivism and after 21 consistently non-related. Individual data was closely matched within these categories. No single pair under age 30 were different by more than a year.

A breakdown of the data in the table below illustrates the spread characteristics of the two populations within these variables.

Table 2.

Number of offenders in grouped categories on age, age of 1st offense and number of prior court appearances.

	Number of offenders	
	Experimental	**Control**
Age Group		
17-20	14	15
21-24	11	10
25-39	8	9
30-40	7	6
total	n-40	n=40
Age of 1st conviction		
pre 18	28	28
18-21	10	11
<21	2	1
total	n=40	n=40
Prior court apps		
0	3	4
1	3	2
2-3	9	8
<4	25	26
total	n=40	n=40

Consistent with known patterns of reoffending the largest number of subjects fall within the 17-20 age category and numbers gradually decline for increasingly older groups. This suggests that in age our sample is

reasonable representative of the wider offending population but differs quite significantly from other populations for which the intervention type is effective. Likewise it is older on average than those subjects in Campbell et al's previous evaluation.

The data also shows that the majority of offenders in our sample came under the high risk groups of first offence before 18 years and the presence of more than 3 court appearances, both of which positively associate with recidivism.

Table 3.

Numbers in experimental and control groups categorised by type of offense.

	Number of offenders	
Type of offense	**Experimental**	**Control**
Car theft	7	10
Property	20	16
Prop+ drugs	3	5
Prop+ assault	3	6
Prop+ EBA	3	2
Assault	2	1
Drugs	2	0
	n=40	n=40

On the predictor item of car theft numbers are weighted slightly in favour of the experimental group. Four were equally matched for this specific category.

Table 4.

Numbers in experimental and control groups categorised by number of prior committments to prison.

	Number of offenders	
	Experimental	**Control**
Prior Committments		
0	26	30
1 or 2	8	5
3 or more	6	5
	n=40	**n=40**

The experimental group has a slightly larger number of offenders with prior prison records but the two groups don't differ a great deal on this factor. There were 29 cases where individuals were the same as their pair and 11 with their matched pair in the category above or below.

Table 5.

Numbers in experimental and control groups categorised by ethnicity.

	Number of offenders	
	Experimental	**Control**
Ethnicity		
Caucasian	25	24
Maori	12	15
Pacific Island	2	0
Unknown	1	1
	n=40	n=40

Whilst our two groups have similar averages on ethnicity perfect matching in individual cases could not be achieved and only twenty eight out of the forty are identical on this item. Since race is not regarded as one of the most important predictors this factor was given low priority.

Appendix 3. Additional results data

(A) Sample Characteristics Rated on Severity of Subsequent Crime

Table 6.

Population distribution of the sample according to the most severe sentence imposed during the subsequent 12 months.

	Experimental		Control	
Sentence	*N*	%	*N*	%
Imp	7	17.5	9	22.5
Sup/Pd	11	27.5	13	32.5
Fine	7	17.5	5	12.5
None	15	37.5	13	32.5
	n=40	100%	n=40	100%

(B) Satistical Comparison of Group Differences Before and After the Outdoor Pursuits Programme.

Table 7

Mean and standard deviation of offending rates 6 and 12 months prior to the intervention and 6 and 12 months following, measured by court appearances

	pre intervention		post intervention	
	12	6	6	12
Expt				
M	1.95	1.07	0.6	1.07
SD	1.01	0.69	0.744	1.02
Control				
M	1.5	1.0	0.92	1.57
SD	0.76	0.22	1.04	1.53

Table 8.

Mean and standard deviation of offending rates 6 and 12 months prior to the intervention and 6 and 12 months following, measured by offenses.

	pre intervention		post intervention	
	12	6	6	12
Expt				
M	3.8	2.125	1.05	1.75
SD	2.66	1.95	1.51	1.99
Control				
M	3.36	2.57	1.35	2.5
SD	2.23	2.09	1.65	2.76

Table 9.

Within and between groups comparison of court appearances 12 months prior to and following the intervention giving paired *t* values and levels of significance

	Expt (pre)	Control (post)
Control (pre)	*t* =2.4•	*t* =.316
	p=.02	p=.75
Expt (post)	*t* = 4.06*	*t* = -1.71
	p<.001	p=.09

*signifiant at .01 level

•significant at .05 level

Table 10.

Within and between groups comparison of offenses 12 months prior to and following the intervention giving paired *t* values and levels of significance

	Expt (pre)	Control (post)
Control (pre)	*t* = .647	*t* = 1.68
	p=..521	p=.099
Expt (post)	*t* = 4.01*	*t* = -1.36
	p<.001	p=.090

*signifiant at .01 level

Appendix 4. Self report measures (study 3)

(A) Affectometer 2. (Kamman and Flett 1986)

(time period) THE LAST WEEK

Over this time period I have had the feeling described by (each) item ...
(how often -- check one column only):

Not at all
Occasionally
Some of the time
Often
All the time

Feeling	Not at all	Occa-sion-ally	Some of the time	Often	All the time	For Office Use (-)	For Office Use (+)
1. My life is on the right track							☐
2. I seem to be left alone when I don't want to be						☐	
3. I feel I can do whatever I want to							☐
4. I think clearly and creatively							☐
5. I feel like a failure						☐	
6. Nothing seems very much fun any more						☐	
7. I like myself							☐
8. I can't be bothered doing anything						☐	
9. I feel close to people around me							☐
10. I feel as though the best years of my life are over						☐	
	0	1	2	3	4		

(time period) THE LAST WEEK

Over this time period I have had the feeling described by (each) item ...
(how often -- check one column only):

Not at all
Occasionally
Some of the time
Often
All the time

Feeling	Not at all	Occa-sion-ally	Some of the time	Often	All the time	For Office Use (-)	For Office Use (+)
1. My future looks good							☐
2. I have lost interest in other people and don't care about them.						☐	
3. I have energy to spare.							☐
4. I smile and laugh a lot.							☐
5. I wish I could change some parts of my life.						☐	
6. My thoughts go around in useless circles.						☐	
7. I can handle any problems that come up.							☐
8. My life seems stuck in a rut.						☐	
9. I feel loved and trusted.							☐
10. I feel there must be something wrong with me.						☐	
	0	1	2	3	4		

(B).Self-efficacy scale (Appended version). (Maddux and Stanley 1986)

This questionnaire is a series of statements about your personal attitudes. Each statement represents a commonly held beleif. Read each statement and decide to what extent it describes you. There are no right or wrong answers. You will probably agree with some of the statements and disagree with others. Please indicate your own personal feelings about each statment below by marking the letter that best describes your attitude or feeling. Please be very truthful and describe yourself as you really are , not as you would like to be.

a = disagree strongly
b = disagree moderately
c = neither agree nor disagree
d = agree moderately
e = agree strongly

		disagree				agree
1.	When I make plans, I am certain I can make them work.	a	b	c	d	e
2.	One of my problems is that I can not get down to work when I should.	a	b	c	d	e
3.	It is difficult for me to make new friends.	a	b	c	d	e
4.	I am always keen to have a go at new activities or sports.	a	b	c	d	e
5.	If I meet someone interesting who is hard to make friends with, I'll soon stop trying to make friends with that person.	a	b	c	d	e
6.	I give up on things before completing them.	a	b	c	d	e
7.	I avoid facing difficulties.	a	b	c	d	e
8.	If I see someone I would like to meet, I go to that person instead of waiting for him or her to come to me.	a	b	c	d	e
9.	When I have something unpleasant to do I will stick to it until I finish it	a	b	c	d	e
10.	When I decide to do something, I go right to work on it.	a	b	c	d	e
11.	When unexpected problems occur, I dont handle them well.	a	b	c	d	e

		disagree				agree
12.	I feel insecure about my ability to do things.	a	b	c	d	e
13.	I am a self reliant person.	a	b	c	d	e
14.	When I'm trying to become friends with someone who seems uninterested at first, I don't give up easily.	a	b	c	d	e
15.	I keep trying at a new sport or physical activity until I am good at it.	a	b	c	d	e
16.	I do not seem capable of dealing with most problems that come up in life.	a	b	c	d	e
17.	Failure just makes me try harder.	a	b	c	d	e
18.	When trying to learn something new, I give up if I am not initially successful.	a	b	c	d	e
19.	I have aquired my friends through my personal abilities at making friends.	a	b	c	d	e
20.	I avoid trying to learn new things when they look too difficult for me.	a	b	c	d	e
21.	If I can't do a job the first time, I keep trying until I can.	a	b	c	d	e
22.	If something looks too difficult, I will not bother to try it.	a	b	c	d	e
23.	When I set important goals for myself I rarely achieve them.	a	b	c	d	e
24.	I give up easily.	a	b	c	d	e
25.	I do not handle myself well in social gatherings.	a	b	c	d	e
26.	I do not like to be beaten by a problem, I will keep trying until I have solved the problem.	a	b	c	d	e

(C) Course Evaluation Questionnaire

There will be some things about the programme that you enjoyed more than others. I am interested in finding out what these are. below is a list of things you may have liked. I would like you to write down how much each statement relates to how you felt. I will also get you to comment on any thing else that you thought was good or bad. Remember there are no right or wrong answers. Each person is different and the answers you may give may be very different from another persons. Everything you write down is kept secret, I am the only person who sees you answers. Results will be reported in such a way that your individual identity will not be known.

Here is a list of some of the good things you may have got out of the course. Please answer as honestly as you can. On a scale of one to five mark how true each one is for you. 1=not at all 5=very/alot

1.It gave me a sense of achievement ___

2. I feel more confident now I have done the course. ___

3. I made some good friends on the trip. ___

4. It felt good to see the results of my efforts. ___

5. I received encouragement and support from the team leaders. ___

6. I enjoyed the physical challenge. ___

7. It gave me a chance to learn what I am capable of. ___

8. I received encouragement and support form others on the trip. ___

9. It gave me a chance to share may ideas ane feelings with others. ___

10. I felt good to be amongst nature. ___

11. It made other problems in life seem less important. ___

12. I learned new skills. ___

13. I am more likely to try new outdoor leisure activities. ___

14. It was a good opportunity to take time out to think more clearly. ___

15. I enjoyed the physical beauty of the outdoors. ___

16. It increased my respect for nature. ___

17. It was good to have succeeded in something that was a result of my own hard work. ___

18. I got a buzz from having done it. ___

Any other comments?_____

_____

19. The experience has altered my attitude toward reoffending (that is I think I am less likely to reoffend). ___

20. The experience has made me feel more positive toward the probation department and what they are doing. ___

Appendix 5. Letters of explanation and ethics form.

(A) Letter of Explanation for Participants:

Dear Expedition Participants

The outdoor course that you will be doing has been going for a number of years now. Every so often it is important to evaluate a course to see how helpful it is. An evaluation means asking those who have been on the course to answer some questions. The information can then be put together to let us know what things are working well.

Before going on this course I would be grateful if you could fill in some forms for me. I will also be asking you to do the same thing shortly after you get back.

All information collected will be confidential, that means that I am the only one to see your questionnaires and what I report will be for the group as a whole (nothing can identify you as an individual). Your probation officer will help with the first lot of questionnaires by reading them through. Once you have finished answering the questions you can place your questionnaires into the envelope provided and seal it. This will make certain that nobody else apart from me will see it. Please make sure that you put your name on the back of the envelope.

Your participation is of course voluntary - we would like you to be part of this but you do not have to be and you may withdraw at any time. For this project to be a success though, your involvement is essential. The information you give me will be of great value and much appreciated.

Yours Sincerely

Caroline Davie

I agree to participate in this project, on the understanding that I may withdraw from the experiment if I wish to. All information collected will be confidential as will the identity of the participants.

Name _____

Signature _____ Date _____

(B) Letter of Explanation for Participant's Probation Officers.

Dear.....

As you are probably already aware, this year, in conjunction with Psychological Services (Justice Dept), I will be evaluating the outdoor recreation programme run by probation, as a part of my masters degree in psychology. For this I will need to collect some data from the participants. The evaluation entails each person filling out a number of questionnaires both before and after the expedition.

Because it would be difficult to arrange individual interviews with each person before the trip, could you get participants to fill in the first lot of forms. This requires organising them to fill in the given questionnaires the week or so before they go and assisting those who need it - extra questionnaires will be given for you to read out.

I have tried to make this process as confidential as possible. Along with the forms an envelope is provided so subjects can place their completed questionnaires in the envelope and seal it. This makes certain that I am the only other person to see the answers. Could you please check that their name is on the back of the envelope - I need this so I can match pre and post expedition questionnaires.

I will do the post-expedition data collection myself, I will however need you to let me know (via Steve Anderson) what time your client is reporting in. Then, hopefully I can do my interview immediately before or after they report. Could you make sure participants are aware that I want them to fill in some more questionnaires shortly after they return from the course, ie. either the first or second week after they get back. They will need to allow for half an hour of their time for this, although for many it may not take that long.

Taking the time to answer these means that the project will work, the more people the better. I would therefor be grateful if you could encourage as many as possible to be involved.

Thank you for your help.

Appendix 6. Individual scores on the self report items (study 3)

(A) Individuals Scores for the A2

Table 11.

Scores for each subject before and after outdoor expedition on Affectometer 2

subject	pre test	post test
1	18	25
2	6	26
3	6	8
4	26	29
5	-1	-1
6	34	34
7	3	3
8	21	20
9	5	11
10	11	15
11	-9	-7
12	16	19
mean	11.33	15.12

(B). Individual Scores for the Self-efficacy Scale

Table 12.

Individual scores on self efficacy before and after outdoor expedition

subject	pre test	post test
1	87	113
2	90	96
3	85	85
4	77	83
5	91	89
6	87	101
7	90	90
8	104	117
9	92	88
10	89	92
11	70	74
12	77	96
mean	86.583	93.66

(C) Mean scores for course evaluation items

Table 13.

Mean scores on each item for course evaluation questionnaire

Item	mean
1.It gave me a sense of achievement	4.75
2. I feel more confident now I have done the course.	4.25
3. I made some good friends on the trip.	4.16
4. It felt good to see the results of my efforts.	4.66
5. I received encouragement and support from the team leaders.	4.25
6. I enjoyed the physical challenge.	4.5
7. It gave me a chance to learn what I am capable of.	4.16
8. I received encouragemnet and support form others on the trip.	4.16
9. It gave me a chance to share may ideas ane feelings with others.	3.5
10. I felt good to be amongst nature.	4.66
11. It made other problems in life seem less important.	4.08
12. I learned new skills.	4.16
13. I am more likely to try new outdoor leisure activities.	4.58
14. It was a good opportunity to take time out to think more clearly.	4.66

15. I enjoyed the physical beasty of the outdoors.	4.66
16. It increased my respect for nature.	3.75
17. It was good to have suceeded in something that was a result of my own hard work.	4.75
18. I got a buzz from having done it.	4.16
19. The experience has altered my attitude toward reoffending (that is I think I am less likely to reoffend).	3.83
20. The experience has made me feel more positive toward the probation department and what they are doing.	4.16